

THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

VOL. XXXI

JULY, 1932

No. 7

CONTENTS

Acute Epidemic Encephalitis. Fred P. Currier, M.D., and David B. Davis, M.D.....	437	A Case of Primary Carcinoma of the Liver in an Infant. Merle Pierson, M.D., and Mary Campbell, M.D.....	482
The Routine Use of the Filament-Nonfilament Count. William S. Reveno, M.D., and Morris S. Berent, M.D.....	443	Michigan's Department of Health. C. C. Slemons, Dr.P.H., M.D.....	483
Report of a Series of Cases of Bougie and Bag Inductions of Labor. G. A. Carmichael, M.D.....	449	Editorial:	
Actinomycosis Primary in Ovary. C. E. Boys, M.D.....	453	Healing Cults	485
Spinal Anesthesia in Cases of Emergency Surgery. Earl George Krieg, M.D.....	456	Prophylaxis Against Malpraxis.....	486
Rural Obstetrics—Analysis of 500 Cases. Charles F. DuBois, M.D.....	462	The Filament-Nonfilament Count.....	486
Kidney Infections of the Adolescent Female. Robert L. Cowen, M.D.....	469	Taxation	486
Asphyxia Neonatorum. Harold Henderson, M.D.....	471	A Bit of Medical History.....	487
Relationship of Laryngeal Paralysis to Medicine and Surgery. Edgar E. Poos, M.D.....	477	Medical Economics:	
A Report of Three Cases of Trichiniasis With One Death. C. N. Sowers, M.D.....	479	Can We Afford State Medicine? Part V. J. G. R. Manwaring, M.D.....	494
		Communications	496
		General News and Announcements.....	497
		Obituary	498
		Society Activity	499
		County Societies	503
		The Doctors' Library.....	506

ACUTE EPIDEMIC ENCEPHALITIS*

FRED P. CURRIER, M.D., and DAVID B. DAVIS, M.D.

GRAND RAPIDS, MICHIGAN

Epidemic encephalitis is a disease which offers a most perplexing problem to the present day physician. It is true that we are becoming more and more adept in the diagnosis, particularly of the chronic forms of the disease, yet there is still considerable uncertainty as to the bacteriology and much to be desired as regards effective treatment. Considered in its entirety, and with particular attention to the social, medical, and economic aspects, we are presented with a problem which is quite as important as infantile paralysis. Because of the wide scope which such a disease presents for discussion, it was deemed advisable, especially in view of the recent interest in anterior poliomyelitis, to limit this paper to the subject of acute epidemic encephalitis.

According to the survey of the Matheson Commission published in 1929, the disease really began as an epidemic in this country

in 1919 and reached a peak of about 8,000 cases in 1920. From then on, it gradually receded until 1924, when there were again over 6,000 cases. The number of cases again gradually fell off to about 2,000 a year in 1927. From personal inquiry, I find that it is seldom that an acute case is seen in certain of the Eastern cities of the

*Read before the Medical Section of the Michigan State Medical Society at the Annual Meeting, Pontiac, Michigan, September 23 and 24, 1931.

United States during the last few years. In one of the largest clinics in the city of Philadelphia, an attending neurologist had not seen an acute case in the past five years. The benign character of the acute symptoms in certain instances may account for the fact that some of these cases are rarely seen in the out-patient departments of large hospital clinics.

The authors have had the opportunity of seeing twenty-six acute cases since 1927, fourteen of these occurring in the year of 1930, the rest being about equally distributed throughout the other years. This number of cases is as frequent as when the epidemic was at its height in our particular community in 1919 and 1920. Similarly to the situation as regards anterior poliomyelitis, there appears to have been no year, since 1927 at least, when no cases have been encountered.

It has been fairly well established by Levaditi¹ and others that this disease, like anterior poliomyelitis, is caused by a filterable virus. However, there are others, particularly Rosenow, who claim the infecting organism to be a streptococcus. Levaditi furthermore attempts to show that the virus is closely associated with the filterable virus of herpes encephalitis. His convincing work has been carried out principally on rabbits, but, of course, there is always room for doubt as to whether the same conclusions would hold true as regards the human. That the disease is not identical with poliomyelitis has been established by Amos,² who showed that there was no cross immunity for the two diseases. Also, their symptomatology is sufficiently different to establish each as a disease entity.

Although the total number of cases in this series is too small to draw any conclusions regarding seasonal incidence, yet we found that the months of November, December, January, and February had the least number of cases. One would naturally expect that, inasmuch as this disease is usually thought to be preceded by an acute nasal infection, the late fall and winter months would show the greatest incidence. As a matter of fact, only six of twenty-four cases gave a history of upper respiratory infection preceding the encephalitic symptoms. It is now quite a common observation, especially in neurological and medical practice, that many so-called post-encephalitic cases are unable to give a

history as to the time of their acute infection.

TABLE I
26 cases (total number)
Yearly occurrence:

Year	No. cases	Month	No. cases
1927	4	July	2
1928	1	August	4
1929	4	September	2
1930	14	October	4
1931	3	November	1
		December	1

November, December, January, and February have the least number of cases.

The Matheson report shows that the seasonal incidence taken throughout the world was highest during January and gradually declined to the lowest level in the summer months to again begin an ascending curve in late October, November, and December. The Japanese epidemic of 1924, however, showed a very high incidence during the summer months.

Generally speaking, epidemic encephalitis is a disease of youth, the average age in this particular group being 24 years, while the average age in infantile paralysis would undoubtedly be somewhat lower. The average temperature of 100, pulse of 92, and respiration rate of 23, all show low readings similar to the average case of infantile paralysis.

TABLE II

Total number of cases, 26 (male, 15; female, 11).
Average age, 24; oldest, 61, and youngest, 2.
Average temperature, 100.05; lowest, 98; highest, 103.
Average pulse, 92; slowest, 74; highest, 150 (in child aged 2).
Average respiration, 23; slowest, 20; highest, 40 (in child aged 2).
Six out of 24 cases gave history of upper respiratory infection.
In five recorded cases, there was an average lapse of time of 10 days after the acute respiratory infection until the encephalitic symptoms appeared.
Average number of days of acute illness, 34; shortest being 4 days, and the longest, 110 days.

In only 6 of 24 cases was there a preceding upper respiratory infection, so-called "head cold," and in 5 of these cases there was an average lapse of 10 days before the neurological symptoms actually appeared. We are quite firmly convinced that the infection in many of these cases may have been so mild, particularly on the part of children, as to have gone unnoticed. It is

quite possible that many people infected with this organism may have been hosts to the virus for months or even years before the acute encephalitic symptoms came on. It must be clearly understood, too, that although this disease followed in the wake of influenza, the two diseases are not identical. This has been quite definitely proven by reliable bacteriological research, as well as by the symptomatology as regards the two infections of the nervous system.

In only 10 cases of this series was there a history of general malaise, weakness, and aching, and that lasting but for a few days (4). The acute illness, as a whole, however, lasted on an average of 34 days.

That lethargic encephalitis is a misnomer as regards this particular disease is well brought out in this series of cases, as lethargy occurred in only 64 per cent of the total number. Strange to say, neither insomnia nor reversal of sleeping hours was noted in any case. A symptom quite as prominent as that of lethargy was that of myoclonus, which was found in varying degrees of severity in 62 per cent of the cases, or sixteen of the total number. More will be said of this particular feature later.

Headache ranks with lethargy and myoclonus in being an important symptom. In 15 of 23 cases, headache was present, and in 6 of these 15 cases, headache was of a posterior cervical type, such as is often associated with the early appearance of meningitis or meningismus. In one case in particular, headache was the reason for the entrance of the patient into the hospital.

The monotone speech, so common in the pseudo-Parkinsonian type of epidemic encephalitis, is not found, as a rule, in these early cases. There were only four of these patients who gave a history of any speech disturbance which was at all suggestive of the monotone speech of the chronic encephalitic. In one case, a man of about 30 years of age, there was a history of stuttering, which came on suddenly and lasted for about twenty-four to forty-eight hours. As the patient expressed it later, "It seemed just as though my clutch was slipping."

Within the past week I have observed a case of acute encephalitis in a boy ten years of age, and in which there was a speech disturbance. It seemed difficult for him to separate the jaws, and his face, even after an illness of only a week's duration, had

already assumed a somewhat Parkinsonian expression. The lips were always in apposition, and he said it seemed difficult for him to talk. He also had difficulty in using his arms and his legs and would drag both toes in walking, something similar to the more severe cases of chronic encephalitis. However, all his deep reflexes were present and sensation was normal, thus serving to differentiate the condition from infantile paralysis. He was having insomnia, with visual hallucinations occurring at night.

Naturally, during the recent scare over poliomyelitis, his sickness was suspected to have belonged in that category. He had a history of an acute head cold five days preceding the onset of the nervous symptoms, but he had no history of any intestinal disturbance.

Besides the speech disturbance, the other symptom pointing toward bulbar involvement, which was dysphagia, or disturbance in swallowing, occurred in only 3 cases of 24 (12½ per cent).

Double vision (diplopia) does not seem to be observed as commonly in this series of cases as it was during the earlier years of the appearance of this disease in this country. We were led to believe that diplopia was present in practically every case, or at least in a large percentage of cases. We find it complained of in only 4 cases of the 24 (16.6 per cent).

Difficulty in voiding urine or a total inability to void urine was noted in 4 of 21 cases. Just where the lesion is in this particular symptom would be difficult to state. We have observed it in the cord lesion of anterior poliomyelitis, although I believe the average text will state that bladder symptoms are rare in infantile paralysis. Perhaps it would be more accurate to state that paralysis of the bladder muscles alone is rare in infantile paralysis.

Drooling, which is so common in the Parkinsonian type, was absent in all these cases.

Besides the myoclonic movements, which were spoken of above, we also noticed fairly commonly other muscular movements, such as facial twitching, fascicular tremors of certain muscular groups, and in two cases the patients suffered from generalized convulsive movements. In one instance, there was Jacksonian epilepsy during the acute attack.

TABLE III
MYOCLONUS

1. Symptom present in 16 cases (62 per cent).
Practically the same frequency as lethargy (64 per cent).
2. Part of body affected:

<i>Neck muscles</i>	1 case
<i>Respiratory muscles</i>	6 cases
<i>Abdominal muscles</i>	7 cases
<i>Back muscles</i>	7 cases
<i>Left shoulder muscles</i>	1 case
<i>Extremities</i>	3 cases
<i>Left face muscles</i>	1 case
<i>Gluteal muscles</i>	1 case

The myoclonic movements deserve special mention. We will show you some of those cases in the moving pictures later. These myoclonic movements are frequently not complained of by the patient, and it is not uncommon for them to be passed over unnoticed by the examining physician. Two cases of this series would have been missed entirely if the patient had not returned to the office on the second day and been asked to expose the chest and abdomen for complete examination. The myoclonic movements were present in the abdomen on the second day, but were absent on the first day. Their presence made the diagnosis in both instances. These myoclonic movements are frequently relieved in a day or two days, but they may persist anywhere from a week to a year or more. I have seen one case in which they persisted for over a year.

A particularly interesting situation arose in one case in which the patient suffered from myoclonic movements of the back muscles. The patient associated these myoclonic movements with an injury which he had received while at his work. Thus there was injected into the situation a medico-legal phase. However, after a rather slow onset, the patient went on to develop cranial nerve palsies and the Parkinsonian expression, and within several weeks died in the acute stage of the disease. In passing, it might be called to your attention that myoclonic movements frequently follow distemper in dogs and are often diagnosed as chorea. The dog must be given some consideration as one of the common carriers of the disease.

In only one of these cases was the gait affected. The oldest case in the series, a man aged 64 years, could have easily been mistaken for a long-standing case of locomotor ataxia (tabes). However, the sensory examination and a study of the deep

reflexes showed him to be absolutely normal, thus ruling out any such diagnosis.

No atrophy of muscle groups was seen, except in one case in which there developed a contracture very early in the acute stage. We assumed that the atrophy in that case was due to disuse occasioned by the spastic condition rather than to any changes in the anterior horn cells of the spinal cord. The absence of atrophy is a good point to remember in the differential diagnosis between this disease and infantile paralysis. However, it must be remembered that we have associated with this same filterable virus infection the so-called encephalomyelitis cases; also the encephalomyelitis disseminata as emphasized by Spiller³ recently, but designated also as early as 1911 by Oppenheim⁴; and, thirdly, the cases showing a combination of encephalitis, myelitis, and neuritis in which there may be atrophy present. The atrophy in those cases is apt to appear much more slowly than in the case of anterior poliomyelitis (infantile paralysis). Some of the pictures which will be shown later will show atrophy in certain instances, but atrophy which came on slowly after the acute stage of the disease had passed.

The tremors which are noticed so commonly, especially in the late stages of this disease and in the Parkinsonian type, are not present, as a rule, in the early cases. We saw no fine tremors suggestive of the neurosthenic type except in one instance in which the patient developed a fine tremor and sweating and the restlessness suggestive of toxic goiter. However, his metabolism test and an examination of the heart failed to substantiate any such suspicion. It was undoubtedly a manifestation of sympathetic nervous system involvement. He also had marked myoclonic movements, which could be brought out as late as a year later if enough exciting influence was brought to bear.

The deep reflexes, that is, the biceps, triceps, knee, and Achilles, were exaggerated in 4 cases, while the superficial and deep reflexes were exaggerated in 2 cases. In one instance, a very interesting phenomenon was observed. By a slight touch most anywhere over the body, especially the abdomen, or by a slight tap to the knee, the patient would be thrown into a reflex of the whole body, with a tendency to pull the head suddenly and quickly forward. We termed this a

"spreading reflex." In one other instance, a similar thing was observed, but not to such a marked degree (a picture will be shown later of this particular case). An unusually marked degree of increase in muscle tonus was observed in another instance. This was in a boy of about fourteen years of age. During the first week or so of his illness, this increase in muscle tonus, together with a marked tenderness of his muscles with the additional tendency to throw him into a generalized tonic spasm if the muscles were pinched, made it necessary to keep him under opiates. His was the case in which there developed a contracture of the one foot and ankle.

At the same time that he suffered from this marked increase in muscle tone, he also had the myoclonic movements of the abdomen, making it an extremely painful picture. Somewhat later, when the acute tenderness had disappeared, one could turn this patient over much as you would a slab of stone. Strange to say, all of this eventually disappeared. (Pictures of this case, before and after the acute illness, will be shown.) We interpreted this patient's lesion causing the increase in muscle tone as being one of a bilateral lesion of the basal nuclei, presumably corpus striatum.

A Babinski sign and a Kernig sign were noted in four cases. Even in spite of the fact that some of these cases had tenderness in the cervical region, a typical Brudzinski sign was not recorded in any case, so that its absence points more toward a meningismus in those cases than toward a true meningitis.

It may seem somewhat paradoxical that in view of the fact that cranial nerve palsies are such an important aid in the diagnosis of epidemic encephalitis, there was no actual paralysis of any cranial nerves in this whole series. But, paresis, or weakness of the function, of certain parts supplied by motor cranial nerves was evident in a number of cases. This paresis brought on such symptoms as dysphagia, diplopia, stuttering, and a bilateral facial weakness in one instance. The sensory cranial nerves seem to be particularly immune in this infection. There was no symptom or sign to indicate their involvement in any case. The pupillary reactions were likewise normal, except in one instance in a child two years of age in which one could obtain no reaction to light. Cases, of course, have been reported in the

late stages of this disease, in which one apparently was dealing with an Argyll-Robertson pupil. We have seen several such instances in our own collection of chronic cases and in which we were unable to make a diagnosis of syphilis by any of the available tests or to substantiate it by the history. There was nothing unusual about the examination of the fundi, except in one case in which the consulting physician reported a hemorrhagic retinitis with papillitis. This occurred not in the acute stage but rather in the subacute stage, and the case was suspected, naturally, of being a brain tumor. If one had not known and observed the early history of the illness, which was distinctly of an infective type with fever, a diagnosis of tumor in a silent area would have been quite reasonable. However, the case went on to clear up gradually in the course of a few months, and at the present time is well.

Except in the one case which showed the marked increase in muscle tonus, we saw no associated sensory changes in the body. In this particular case, the patient had a marked hyperalgesia and hyperesthesia over the whole body. A mere touch or a very slight pin prick was enough to produce a generalized tonic spasm with severe pain.

The sympathetic nervous system in these acute cases was not involved to the extent which we observe it in chronic cases. Such changes as dryness or oiliness of the hair and the skin, changes in the sweating, particularly of the hands and feet, are quite common in the chronic case, but not so with the acute case. As has been mentioned before, we noted sweating in only one instance. No particular flushing or blanching of the skin worthy of note was recorded, except in the one instance suggesting the picture of toxic goiter.

The spinal fluid findings were interesting in that many of them appeared to be practically normal. However, in all of them there was a slight increase in the cell count, the lymphocyte count averaging 44, and these being, in the average case, small lymphocytes. Albumin and globulin were found in a trace in about half of these cases examined. Quantitative sugar test, which is quite important in differentiating this condition from tuberculous meningitis, was found to be normal in those cases examined, there being an average of 67 mgm.,

per 100 c.c. Quantitative chloride was likewise found to be within range of normal. This, again, is a very good differential test to use in determining whether one is dealing with tuberculous meningitis. The chloride test in this particular condition is apt to be higher than that of tuberculous meningitis.

TABLES IV AND V

Spinal Fluid Findings

1. Clear, except for one fatal case.
2. White cell count average per c.mm., 44.
3. Red cell count, 750. Two cases had counts of 6,750, which raised the average from 79 to 750. The lower figure is more nearly the correct average.
4. Carbolic test, trace in 8 of 19 cases.
5. N. A. I, trace in 7 of 19 cases.
6. N. A. II, trace in 10 of 19 cases.
7. Fehling's test for sugar, positive reduction in 6 of 14 cases.
Normal in 5 of 14 cases.
Reduced in 3 of 14 cases.
8. Quantitative sugar, 67 mgm., per 100 c.c.
(Normal, 50-75.)
9. Quantitative chloride, 652 mgm., per 100 c.c.
(Normal, 720-750.)
10. Gold curve flat in 6 of 17 cases.
Very slight rise in the rest. Never over 2 at any one point.
11. All Kahn's negative on both blood and spinal fluid.
12. Animal inoculations negative in 3 cases tested.
Negative T. B., tests in all cases examined.
13. Average white count on blood, 9,250.

Sugar and chloride, according to the statistics of Ayer and Fremont Smith,⁵ are low in tuberculous meningitis while perhaps normal or slightly above normal in epidemic encephalitis. Likewise, in acute poliomyelitis, they are both normal or slightly increased. In general, it may be said that quantitative sugar, chloride, and protein tests offer much more assistance in differential diagnosis than simple qualitative tests. The gold curve is practically flat in all these cases. In a few cases in which animal inoculations were tried and guinea pigs used, our results were negative, as was to be expected. Levaditi¹ had success in his animal experimentations by using rabbits. They seem to be the animal most easily infected, but the results there are not uniformly satisfactory. So, from a practical standpoint, animal inoculation is important principally in a negative way. Our examination for tuberculosis in both the spinal fluid and with animal inoculation was negative in all cases examined. There was not the typical pellicle formation in the spinal fluid in any case.

The average white cell count on the blood

was 9,250, and the differential count was within range of normal.

As to the treatment of this disease, it can be said without hesitation that there is at present no particular drug or medication in any form which can be considered to be specific. The Matheson report quotes a statement by Hall as follows:

"The evidence as to the real value of any of the many methods of treatment advocated is difficult to estimate in a disease, the natural progress of which is so extremely irregular. The verdict, on the whole, is that at present any reliable therapeutics, either for the disease itself or for its many after results, does not exist."

Our acute cases were all required to rest in bed for long periods of time, and iodides and salicylates were given by three different methods—intravenously, orally, and per rectum. The iodides and salicylates in starch water were given per rectum in children and in those cases in adults in which there was evidence they produced unpleasant stomach symptoms. In a general way, it may be said that the combination of the two drugs seemed to give the patient some relief and in certain instances the temperature would drop to normal. We were inclined to think that perhaps it had a favorable influence on the outcome of the acute symptoms, but perhaps "the wish was the father of the thought." We also used occasional lumbar drainage and typhoid vaccine. The typhoid vaccine was given in a dosage sufficient to produce a general reaction in the individual. This reaction, in certain instances, was accompanied by a chill and a rise in temperature. No specific vaccine or serum was used in any of this series of cases. It has been quite definitely shown that medication along that line is not definitely specific for the disease and that the patients, as a whole, may get along quite as well without such medication as with it. Until more can be done as regards the bacteriology of this particular disease, it is quite safe to say that our efforts at medication and treatment will be more or less haphazard and futile. It might be mentioned that from the symptomatic standpoint we have obtained very good results in the chronic cases, as has been the experience of many others, with the use of hyoscin and stramonium. These two drugs seem to be the most reliable in alleviating such symptoms as the increase in

muscle tonus, the marked slowness of movement, and such symptoms as drooling and slowness of speech. Either of these drugs may be used over a long period of time without any marked deteriorating effect on the part of the individual.

REFERENCES

1. Levaditi, C.: *Arch. of Neur. and Psych.*, 1929, 22:767.
2. Amos, H. L.: Immunological Distinction of Encephalitis and Poliomyelitis. *J. Exper. Med.*, 1921, 33:187.
3. Spiller, W. G.: Encephalomyelitis disseminata. *Arch. of Neur. and Psych.*, 1929 (October), 22:647-671.
4. Oppenheim, 1911.
5. Statistics of Ayer and Fremont Smith, presented before the American Neurological Association in June, 1926.

THE ROUTINE USE OF THE FILAMENT-NONFILAMENT COUNT*

WILLIAM S. REVENO, M.D.,† and MORRIS S. BERENT, M.D.‡
DETROIT, MICHIGAN

This study was undertaken with the object of determining whether the filament-non-filament count could be adopted as a routine procedure and whether it would prove of greater value to the clinician than the differential count that is so universally used.

The frequent instances of the failure of the ordinary differential count to coincide with the clinical findings have stimulated many workers towards more minute studies of the behavior of the leukocytes, and more particularly the polymorphonuclear neutrophils, in infection. Foremost among these was Arneth,¹ whose work on the changes in the nuclear material of neutrophils during acute infections represented a noteworthy effort towards gaining more accurate and extensive information on this subject, and resulted in his separation of neutrophilic leukocytes into five groups. In Class I, which in normal individuals represented about 5 per cent of the total, were placed those cells with a slightly indented nucleus. Class II, constituting 35 per cent of the total, had two lobulations. Class III, representing 41 per cent, had three; Class IV, making up 17 per cent, had four, and Class V, making up only 2 per cent, had five or more lobulations. The age of the cell corresponded to the number of lobulations, those of Class III or IV being older and more differentiated than those of Class I or II. His further classification of these, as well as the lymphocytes and monocytes, resulted in some eighty-one subdivisions and made the method too cumbersome for practical use. The value of the method was, however, generally recognized, particularly the changes which he termed the "shift to the left" and the "shift to the right," the former representing the response of myeloid tissue to the stimulus of infection by an increase in the number of immature cells, and the latter a

decrease in the number of immature cells back towards the normal as the stimulus of infection subsides.

Von Schilling,² in 1920, published a modification of Arneth's groupings which is of great clinical value. He divided Arneth's Group I into four types and, in addition, called attention to variations in the size of the granules in the cytoplasm and their tendency to stain more deeply as evidence of toxic changes in immature polymorphonuclears. Pons and Krumbhaar,³ Cooke and Ponder⁴ and Piney⁵ are outstanding among those who have made singular contributions towards the simplification of the method of evaluating changes in the neutrophils.

Basing their classification of the different types of polymorphonuclear neutrophils on the work of the authors already mentioned, Farley, St. Clair and Reisinger⁶ developed what appears to be a simplified method that lends itself readily to routine use by those lacking special training in making blood examinations. It is more directly based on the work of Cooke and Ponder, who classified the polymorphonuclear neutrophils into five separate groups.

The method of Farley et al. involves a regrouping of the five classes of Cooke and Ponder into two classes, the first identical with their Class I, and the second including their Classes II, III, IV, and V. The first class is termed the "nonfilament" while the second is termed the "filament."

From a study of a series of counts in 100

*From the Highland Park General Hospital with the technical assistance of V. Brekke, H. Sider and V. Yorker. Read before the Wayne County Medical Society, May 17, 1932.

†Dr. William S. Reveno is a graduate of the Detroit College of Medicine and Surgery, 1921, his specialty being Internal Medicine. He is Instructor in Clinical Medicine, Detroit College of Medicine and Surgery. He has for a number of years edited the Wayne County Medical Bulletin.

‡Dr. Morris S. Berent is a graduate of the Detroit College of Medicine and Surgery, 1931. He is Resident Physician, Highland Park General Hospital.

normal individuals Farley and his co-workers found the upper limit of the normal young polymorphonuclear leukocyte or the non-filament count to be around 16 per cent of cells, while the average count in 190 presumably normal adults was around 8 per cent.

Mullin and Large,⁷ in reporting a series of filament-nonfilament counts made according to the method of Farley et al., and carried out on some thirty cases of acute infection, found the procedure a distinct aid in evaluating the clinical picture of disease, in following more closely the course of the infection, and foretelling complications in convalescence.

Following the simplified method of Farley et al., we have made use of the procedure in a series of one hundred hospital patients. Smears were made on glass cover-slips and stained by the Wright method. Observations were based on counts of 100 leukocytes, the relative percentage of filament neutrophils, nonfilament neutrophils, lymphocytes, monocytes, basophils and eosinophils being determined in each instance. Because of the relative unimportance of the other types of cells in this study, only the percentages of filament and nonfilament neutrophils and the small lymphocytes are reported. The normal standards adopted were: nonfilaments 8 to 16 per cent, and small lymphocytes 25 to 30 per cent.

In the evaluation of our data due regard was had for the facts brought out by Weiss,⁷ that in infections each cellular system is called on in definite order. The bone marrow, which supplies the neutrophils, is the first to respond to the call. If the demand is light, that is, if the infection is mild, the delivery of segmented or filamentous neutrophils is increased while the unsegmented or nonfilamentous cells are increased only slightly. When the call is very urgent, as in a severe infection, the number of the non-filament neutrophils shows a moderate to a marked increase.

While this neutrophilic phase is in action, the eosinophils are absent from the circulation, as are most of the monocytes, and it is noted that the lymphocytes have decreased to from 1 to 10 per cent. With the clearing up of the infection, the reticulo-endothelial system swings onto the center of the stage to replace the neutrophilic phase. A shower of monocytes appears in the blood-stream

the moment the peak of the nonfilament cells begins to recede. This phase is rapidly followed by increased activity of the lymphatic system and the lymphocytes begin to rise with recovery, attaining at times a figure of 50 to 60 per cent.

The patients on whom this study was conducted were divided into five groups: I, non-infections; II, chest infections; III, abdominal infections; IV, pelvic infections; and V, miscellaneous conditions. The findings in the various groups are listed in Tables I, II, III, IV, and V.

I. NON-INFECTIONS

In Table I are listed eighteen patients in whom no evidence of an infectious process was found. The total white count never exceeded 10,400. The filament percentages did not show any unusual deviation from the established normal while the nonfilament percentage in each instance was well within the prescribed limit of 8 to 16 per cent. As expected, the small lymphocyte percentage did not show the depression below ten per cent, which is usual in infections. All of the counts, therefore, were in direct line with the diagnoses.

Of interest in this group was patient 11, with a history of neurosyphilis of two years' standing, with early tabes dorsalis. The response of this patient to a Swift-Ellis treatment with an increase in the nonfilament percentage from 16 to 22 and a drop in the small lymphocytes percentage from 40 to 14, is comparable to the experience of G. A. Winfield of the Cleveland Clinic as reported by Mullen and Large.⁷ Dr. Winfield observed that in neurosyphilis, following inoculation with the malarial parasite, very high percentages in the nonfilament counts were noted. This change occurred rapidly and was associated with a marked leukopenia, but none of the cases terminated fatally.

Patient 18 had been in poor health for five years, with the complaint of tiredness and generalized pains. Thorough study failed to reveal evidence of any infectious process. The filament and nonfilament count substantiated the findings. The value of the count in patients of this sort, as well as in those in whom malingering is suspected, is not to be overlooked.

II. CHEST INFECTIONS

In this group are included ten patients with lobar pneumonia, four with broncho-

TABLE I.—NON-INFECTIONS

Diagnosis	Initial count				Final count				
	WBC	F	NF	SL	WBC	F	NF	SL	Progress
1. Prostatic hypertrophy.....	8,000	46	15	36	8,400	45	16	35	Died
2. Cervical laceration; fibromyoma.....	9,700	70	15	11	8,400	60	15	26	Recovered
3. Cardiac failure.....	8,900	70	14	12	.....	.....	.....	.....	Died
4. Renal calculus.....	9,400	80	7	14	.....	.....	.....	.....	Recovered
5. Ruptured Graafian follicle.....	9,700	72	16	10	.....	.....	.....	.....	Recovered
6. Angina pectoris.....	8,900	65	14	20	.....	.....	.....	.....	Recovered
7. Myocarditis; obesity.....	9,800	60	14	22	.....	.....	.....	.....	Recovered
8. Arthritis deformans.....	6,800	58	11	30	.....	.....	.....	.....	Improved
9. Toxic adenoma of thyroid.....	8,600	59	11	30	.....	.....	.....	.....	Unimproved
10. Neurosyphilis.....	10,400	63	12	20	.....	.....	.....	.....	Improved
11. Neurosyphilis.....	7,400	42	16	40	10,500	42	22	14	Improved
12. Hemorrhoidectomy.....	7,600	49	13	32	8,200	44	15	35	Recovered
13. Leiomyofibroma.....	4,300	55	12	25	8,600	55	9	33	Recovered
14. Chronic osteomyelitis of thumb.....	8,300	58	13	22	.....	.....	.....	.....	Recovered
15. Polypoid endometritis; laceration of cervix.....	10,300	48	15	36	.....	.....	.....	.....	Recovered
16. Peritoneal adhesions.....	7,300	55	12	30	7,200	59	13	25	Recovered
17. Adenofibroma of mammary gland.....	9,800	78	9	12	.....	.....	.....	.....	Recovered
18. Anxiety neurosis.....	8,300	52	15	30	.....	.....	.....	.....	Unimproved

TABLE II.—CHEST INFECTIONS

19. Lobar pneumonia.....	27,600	63	33	1	12,300	55	16	23	Recovered
20. Lobar pneumonia.....	13,500	28	60	8	11,300	57	19	24	Recovered
21. Lobar pneumonia.....	9,800	42	23	24	7,800	43	16	40	Recovered
22. Lobar pneumonia.....	17,600	65	22	10	8,500	58	11	31	Recovered
23. Lobar pneumonia.....	15,300	58	25	13	10,000	42	17	41	Recovered
24. Lobar pneumonia.....	17,200	62	23	12	12,400	63	12	13	Died
25. Lobar pneumonia.....	10,100	20	57	21	.....	.....	.....	.....	Died
26. Lobar pneumonia.....	13,500	20	62	17	.....	.....	.....	.....	Died
27. Lobar pneumonia.....	8,700	52	35	5	.....	.....	.....	.....	Died
28. Lobar pneumonia.....	20,400	50	30	20	.....	.....	.....	.....	Died
29. Bronchopneumonia.....	38,500	57	22	12	12,300	64	12	20	Recovered
30. Bronchopneumonia; lung abscess.....	18,900	55	38	8	8,200	40	20	37	Recovered
31. Bronchopneumonia; tuberculosis.....	12,500	55	24	18	.....	.....	.....	.....	Unimproved
32. Bronchopneumonia; renal calculus.....	12,800	55	40	5	8,000	62	12	22	Recovered
33. Bronchiectasis.....	9,400	66	15	17	.....	.....	.....	.....	Unimproved
34. Hemothorax.....	14,750	39	32	30	9,400	60	11	21	Improved
35. Hemothorax.....	9,200	59	15	22	10,500	62	11	20	Improved

pneumonia, one with bronchiectasis, and two with traumatic hemothorax. Counts were made daily in all of these patients but only the initial and final counts are recorded. As is usual in chest infections, the total leukocyte count was high in nearly every instance.

A typical example of the progress in a patient who recovered from lobar pneumonia is illustrated in Figure 1. The downward trend of the curve of the nonfilament percentage to a final figure of 11 and the upward trend of the small lymphocyte percentage to a final figure of 31 is typical of the behavior of the nonfilaments and small lymphocytes in recovery from infections.

The percentage of nonfilament neutrophils is elevated in every instance where there is active infection, while the percentage of small lymphocytes is depressed.

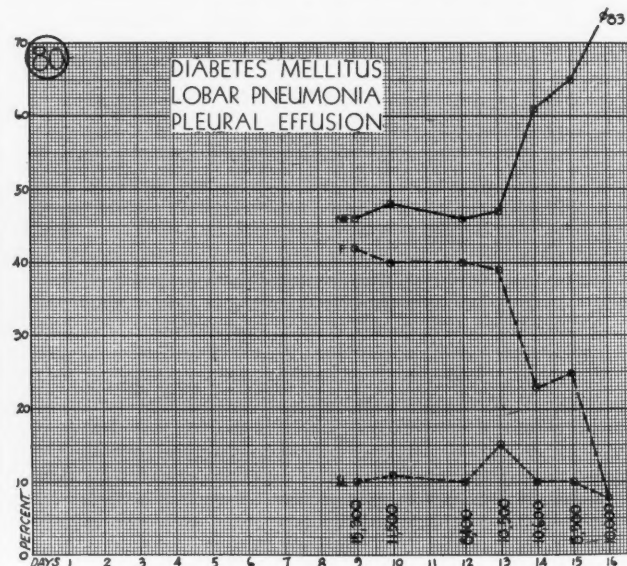
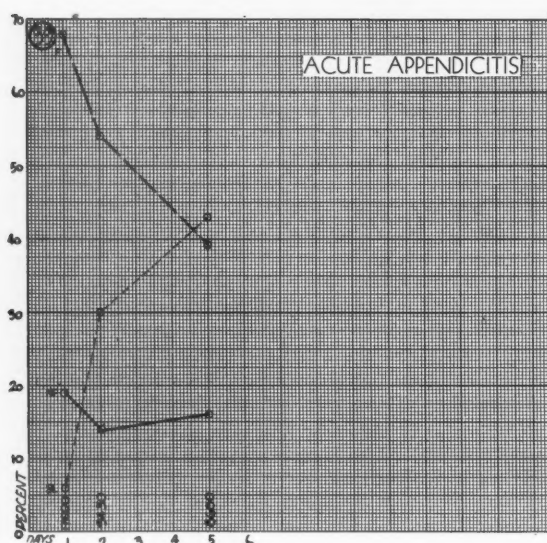
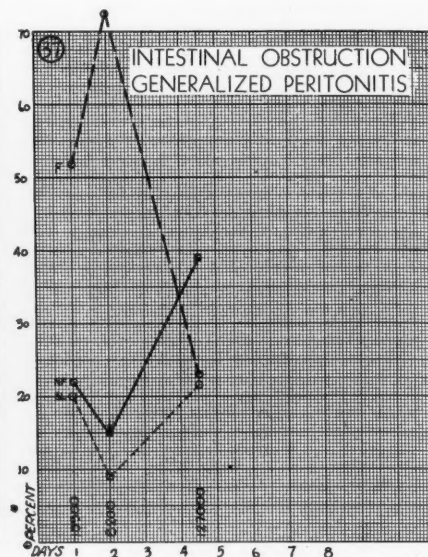
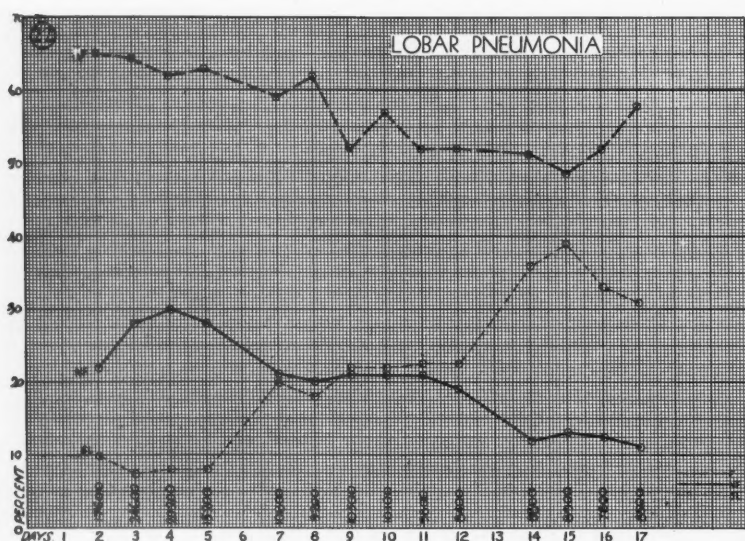
With recovery, the total white count falls, the nonfilament percentage returns within the normal range, and the small lymphocyte percentage shows a marked increase. Where recovery does not occur, the total white count changes but little, the percentage of filamentous neutrophils is either depressed or remains unchanged, while the percentage of nonfilaments either stays at the same level, or shows a gradual or abrupt increase, attaining at times a level above 50 per cent. This latter finding, *viz.*, a nonfilament percentage of fifty or more, is associated with grave conditions and should caution the clinician against issuing a favorable prognosis. The small lymphocyte percentage usually remains depressed in these cases.

Of the five patients who died of lobar pneumonia, four showed the expected increase in the nonfilament cells, two of them

showing percentages of 57 and 62. One, patient 24, showed, with improvement of the pneumonia, a drop in the non-filament percentage from 23 to 12 on the fourth day of illness, yet he died suddenly on that day of cardiac failure. He had been under treat-

immediately following bronchoscopic drainage of the abscess on the twenty-fifth day of his illness.

Patients 34 and 35 suffered from traumatic hemothorax secondary to rib fractures. It will be noted that the first patient,



Graphs of cases listed in Tables I to V. Case number in upper left hand corner.

ment for an undetermined cardiac condition during the preceding month.

The patients with bronchopneumonia showed essentially the same reactions as those with lobar pneumonia.

Patient 30, who had bronchopneumonia complicating a lung abscess, was observed over a long period of time. Although not recorded here, it was interesting to note the drop of the nonfilament and the rise of the small lymphocyte and filament percentages

who had six fractured ribs, also had a compound fracture of the left frontal sinus and consequently showed a nonfilament percentage of 32. The second patient, who had no complicating infection, showed a nonfilament percentage of only 15.

III. ABDOMINAL INFECTIONS

This was the largest group of patients studied. It will be noted that the patients with simple acute appendicitis had total

TABLE III.—ABDOMINAL INFECTIONS

Diagnosis	Initial count				Final count				
	WBC	F	NF	SL	WBC	F	NF	SL	Progress
36. Empyema of gall-bladder.....	12,500	59	33	8	18,200	56	33	8	Died
37. Intestinal obstruction; peritonitis.....	10,900	52	22	20	12,700	23	39	22	Died
38. Perforated duodenal ulcer.....	16,300	70	16	9	8,400	75	9	7	Recovered
39. Acute appendicitis.....	17,000	68	18	6	8,600	38	16	43	Recovered
40. Acute appendicitis.....	13,100	45	16	35	8,900	51	16	31	Recovered
41. Acute appendicitis.....	8,800	55	12	30	10,000	46	16	36	Recovered
42. Acute appendicitis.....	17,200	56	30	12	9,500	45	11	46	Recovered
43. Acute appendicitis.....	17,400	62	23	9	9,800	70	8	20	Recovered
44. Acute appendicitis.....	11,900	50	31	19	8,500	50	14	35	Recovered
45. Acute purulent appendicitis.....	9,800	52	16	28	8,500	60	9	30	Recovered
46. Appendiceal abscess.....	19,400	36	29	33	8,600	39	16	40	Recovered
47. Acute perforative appendicitis.....	20,100	55	35	2	8,800	38	13	43	Recovered
48. Acute suppurative appendicitis.....	24,000	50	32	13	25,000	47	49	12	Died
49. Acute gangrenous appendicitis.....	21,700	57	37	2	9,200	49	16	35	Recovered
50. Acute gangrenous appendicitis.....	18,100	51	30	12	7,100	37	13	48	Recovered
51. Acute ruptured gangrenous appendicitis.....	23,900	53	40	2	13,900	42	23	29	Died
52. Acute gangrenous appendicitis.....	38,000	35	42	22	10,500	31	7	59	Recovered
53. Acute perforative appendicitis.....	22,000	56	32	9	9,600	61	12	20	Recovered
54. Acute perforative appendicitis.....	27,800	—90—	2		10,900	31	54	15	Died
55. Acute gangrenous appendicitis.....	20,400	59	28	10	9,300	59	10	27	Recovered
56. Acute gangrenous appendicitis.....	21,400	53	27	12	8,800	44	12	38	Recovered
57. Acute gangrenous appendicitis.....	9,400	55	25	18	7,600	55	14	28	Recovered
58. Acute gangrenous appendicitis.....	16,800	63	19	17	7,800	55	15	19	Recovered
59. Acute gangrenous appendicitis.....	17,500	52	40	8	7,100	43	20	25	Recovered
60. Subacute appendicitis.....	15,900	61	26	8	7,600	66	11	20	Recovered
61. Subacute appendicitis.....	8,300	52	20	28	14,900	68	12	25	Recovered
62. Chronic catarrhal appendicitis.....	19,500	55	23	13	.....	.....	.....	.....	Recovered
63. Chronic catarrhal appendicitis.....	8,300	49	28	22	8,200	48	20	28	Recovered
64. Chronic catarrhal appendicitis.....	12,300	38	50	12	8,500	56	12	30	Recovered
65. Chronic catarrhal appendicitis and fibroid uterus.....	8,600	57	4	38	9,200	62	12	22	Recovered
66. Chronic catarrhal appendicitis.....	11,700	59	20	17	8,400	45	16	32	Recovered
67. Chronic appendicitis.....	8,400	60	9	30	8,500	57	12	22	Recovered

TABLE IV.—PELVIC INFECTIONS

68. Chronic pelvic inflammatory disease.....	16,500	56	21	21	9,500	47	16	35	Improved
69. Incomplete abortion.....	12,100	58	23	10	8,800	53	13	23	Recovered
70. Induced abortion and acute salpingitis.....	9,500	52	34	12	8,700	57	11	28	Recovered
71. Subacute right salpingitis.....	8,600	58	18	24	7,300	45	20	34	Improved
72. Chronic salpingitis.....	11,300	53	28	15	.....	.....	.....	.....	Recovered
73. Tubercular salpingitis.....	13,750	57	23	20	9,600	47	16	30	Recovered
74. Acute salpingitis.....	9,800	62	20	12	8,800	50	12	32	Improved
75. Chronic endocervicitis and endometritis.....	8,000	62	12	21	7,800	52	12	32	Improved
76. Chronic endocervicitis and appendicitis.....	10,900	62	22	10	9,700	57	20	23	Recovered
77. Ruptured ectopic pregnancy.....	12,000	38	19	37	11,400	40	17	39	Improved
78. Ovarian cyst with twisted pedicle.....	15,300	73	12	5	10,000	43	15	35	Recovered

white counts that did not exceed 17,400, while those with abscess, perforation or gangrene of the appendix had much higher total white counts. Those that recovered showed the usual recession of the nonfilament neutrophils and the increase in the small lymphocytes, while those that died showed the reverse picture. Convalescence was preceded in every instance by a sharp rise in the percentage of small lymphocytes. This observation we have found of great significance in following the progress of the infection.

Patient 37, with generalized peritonitis

and intestinal obstruction (Fig. 2), showed the typical rise in the nonfilament percentage with death on the fourth day following operation. The sedimentation time on the first day, coincident with the count, was 1 hour and 30 minutes, and on the second day 2 hours and 30 minutes.

Patient 39 (Fig. 3), illustrated to a nicety the value of the filament-nonfilament count. Operation in this case was safely deferred because of the satisfactory progress indicated by the count.

Patient 57 showed on admission a total white count of only 9,400, yet the nonfila-

TABLE V.—MISCELLANEOUS CONDITIONS

Diagnosis	Initial count				Final count				
	WBC	F	NF	SL	WBC	F	NF	SL	Progress
79. Carbuncle; septicemia; diabetes.....	8,000	60	14	21	14,700	66	22	7	Died
80. Diabetes; pneumonia; pleural effusion	15,300	42	46	10	10,000	8	83	8	Died
81. Chronic pyelonephritis and myocarditis; prostatic hypertrophy.....	14,300	56	25	19	15,600	63	29	5	Died
82. Chronic nephritis; rheumatic heart.....	11,400	78	9	12	8,600	52	23	20	Died
83. Acute cervical cellulitis and adenitis.....	15,500	45	18	34	10,700	45	16	36	Recovered
84. Acute cervical adenitis.....	10,800	31	15	45	10,600	19	7	70	Recovered
85. Grippe	9,600	49	19	23	.....	.....	.....	.....	Recovered
86. Influenza and acute bronchitis.....	14,300	52	23	7	8,000	41	14	39	Recovered
87. Acute otitis; streptococcic pharyngitis	16,300	47	22	24	10,400	44	12	35	Recovered
88. Acute mastoiditis.....	10,900	39	28	31	10,900	49	18	31	Improved
89. Scarlet fever.....	11,500	50	30	17	.....	.....	.....	.....	Recovered
90. Scarlet fever.....	8,300	68	14	16	.....	.....	.....	.....	Recovered
91. Diphtheria, nasal.....	12,500	70	18	9	.....	.....	.....	.....	Recovered
92. Diphtheria, pharyngeal.....	12,100	62	19	18	.....	.....	.....	.....	Recovered
93. Tonsillitis, acute follicular.....	9,400	60	19	19	8,200	50	18	29	Improved
94. Typhoid fever; intestinal hemorrhage	6,200	31	33	27	7,600	31	20	44	Improved
95. Multiple neuritis.....	7,800	48	38	13	9,900	43	14	32	Unimproved
96. Antepartum pyelitis and cystitis; post- partum acute bronchitis.....	23,800	40	55	7	10,500	44	17	37	Recovered
97. Acute infectious polyarthritis.....	8,300	56	17	21	6,700	49	14	29	Improved
98. Cerebral concussion; scalp abrasion.....	11,100	57	32	9	9,700	64	15	15	Recovered
99. Right inguinal herniotomy.....	8,500	42	30	24	8,400	64	12	21	Recovered
100. Duodenal ulcer; chronic phlebitis.....	8,400	64	18	15	.....	.....	.....	.....	Unimproved

ment percentage of 25 indicated an active infection and demanded operative intervention.

Patient 64, with symptoms of one day's duration, showed an initial nonfilament percentage of 50, indicating a severe type of infection, but made an uneventful recovery.

IV. PELVIC INFECTIONS

None of the eleven patients in this group showed high total white counts. The nonfilament percentage was not unusually elevated, nor were the small lymphocytes remarkably depressed.

Patient 68, with chronic pelvic inflammatory disease, showed an initial sedimentation time of 35 minutes, and final sedimentation time of 50 minutes. She made an uneventful recovery under treatment by injections of foreign protein.

Patient 74 improved under the same type of treatment.

Patient 71, although showing considerable improvement, was discharged from the hospital with evidence of mildly active right salpingitis as substantiated by the persistent elevation of the nonfilament percentage to 20.

V. MISCELLANEOUS CONDITIONS

In this group are included a wide variety of conditions, most of them infections.

Patient 80, with diabetes complicated by

pneumonia with massive bilateral pleural effusion (Fig. 4), showed a striking rise to a terminal nonfilament percentage of 83. The abruptly rising curve was indicative of an increasing toxemia and its continued rise beyond 50 per cent predicted the fatal outcome accurately.

Patients 81 and 82 again showed that a fatal outcome is attended by a rise in the nonfilament percentage.

Patient 84, a white male, age 11 months, suffering from acute purulent cervical lymphadenitis, showed, with recovery, a rise in the small lymphocyte percentage to 70. This illustrates the high percentage that may be attained by this type of cell with convalescence.

Patients 89 and 90, both suffering from scarlet fever, showed relative nonfilament percentages of 30 and 14. The nonfilament percentage in each instance was directly proportional to the severity of the illness.

Patient 96, with antepartum pyelitis, was delivered on the fourth day following admission, the count at that time being 11,900, filaments 42, nonfilaments 16, small lymphocytes 38. Twenty-four hours later the total white count was 11,000, filaments 49, nonfilaments 35 and small lymphocytes 2. The patient had developed what was diagnosed as acute bronchitis. Here, again, was exemplified the typical reaction to infection with an increased nonfilament percentage

and a marked depression of the small lymphocyte percentage.

CONCLUSIONS

From the study conducted on 100 patients, we have found that:

1. The determination of the percentages of the nonfilamentous and filamentous neutrophils, lymphocytes, monocytes, eosinophiles, and basophiles by counting 100 consecutive leukocytes, lends itself readily for routine clinical use.

2. Much may be learned as to diagnosis, prognosis and treatment by the use of this method of studying the blood picture. Changes in the percentage of the young polymorphonuclear neutrophils (nonfilaments) often precede changes in the physical signs and symptoms as well as total cell count changes. In the absence of clinical symptoms, nonfilament deviations from the normal should not be ignored.

3. In acute clinical conditions, where the percentage of nonfilamentous neutrophils does not exceed 16, it may be safely assumed that no infection is present.

4. A nonfilament percentage of 50 or over is indicative of a poor prognosis.

5. Failure of the nonfilament percentage

to return to the normal level of 8 to 16 is a sign of persisting infection.

6. The percentage of small lymphocytes is depressed during the acute stage of an infection and rises with recovery, in many instances preceding the onset of convalescence and running parallel with it.

7. Because of the ease with which it can be performed and because of its great value to the clinician, the filament-nonfilament count should be adopted as a routine procedure in place of the ordinary differential count.

613 PROFESSIONAL BLDG.

BIBLIOGRAPHY

1. Arneth, J.: Die Neutrophilen Leukozyten bei Infektionskrankheiten, *Deutsche Med. Wchnschr.*, 30:54, 92, 1904.
2. von Schilling, V.: Ueber die Notwendigkeit grundsätzlicher Beachtung der neutrophilen Kernverschiebung in Leukozytenbilde und über praktische Erfolge dieser Methode, *Ztschr. f. klin. med.*, 89:1, 1920.
3. Pons, C., and Krumbhaar, E. B.: Studies in blood cell morphology and function; extreme neutrophilic leukocytosis with note on simplified Arneth count. *J. Lab. & Clin. Med.*, 10:123-126, 1924.
4. Cooke, W. E., and Ponder, Eric: The Polynuclear Count: The Nucleus of the Neutrophil Polymorphonuclear Leukocyte in Health and Disease, with Some Observations on the Macropolycyte. Philadelphia, J. B. Lippincott Company, 1927.
5. Piney, A.: Diseases of the Blood. Philadelphia, P. Blakiston's Son & Co., 1928.
6. Farley, D. L.; St. Clair, Huston, and Reisinger, J. A.: Normal filament and nonfilament polymorphonuclear neutrophil count; its practical value as diagnostic aid. *Am. J. M. Sc.*, 180:336-344, 1930.
7. Mullin, W. V., and Large, G. C.: The filament-nonfilament count. *J. A. M. A.*, 97:1133-1138, Oct. 17, 1931.
8. Weiss, Arthur: The staff count. *Arch. Int. Med.*, 48, No. 3, September, 1931.

REPORT OF A SERIES OF CASES OF BOUGIE AND BAG INDUCTIONS OF LABOR*

G. A. CARMICHAEL, M.D.

Instructor in Obstetrics and Gynecology, University of Michigan

ANN ARBOR, MICHIGAN

The obstetrician is faced with the problem of induction of labor in the interests of the mother or child, or both, in about 3 per cent of his cases. In general, there are four groups of cases considered: firstly, the group consisting of the toxemias of pregnancy; secondly, those cases of disproportion between the passenger and passage; thirdly, those cases complicated by hemorrhage, and, fourthly, those cases of pregnancy complicated by pulmonary or cardiac diseases. The method selected should imitate the processes of nature as closely as possible and should minimize the risk of both mother and child. We must realize, however, that patients upon whom we resort to induction of labor are pathologic and that, therefore, a normal labor is not likely to result.

Louise Bourgeois,¹ a midwife, was the first one to induce premature labor. This was in 1608. Because of the frightful mortality incident with cesarean section in the

eighteenth century a conference was called and met in London in 1756. At that time Denmon suggested induction of premature labor by means of rupturing the membranes. Macauley, of London, was the first to perform this operation. Barnes in 1852 introduced an hour-glass shaped rubber bag with a stop-cock. Krause in 1855 presented the method of induction of labor by means of

*Read before the Section of Obstetrics and Gynecology, Michigan State Medical Society Meeting, Pontiac, Michigan, September 23, 1931.

introducing into the uterus a flexible bougie. De Ribes in 1888 invented the bag which today bears his name and its employment enjoys considerable popularity in many hospitals. Many drugs have been introduced for induction of labor but most of these have fallen by the wayside with the exception of castor oil, quinine and the various pituitary extracts.

Upon reviewing the literature we find that clinicians are not agreed as to the efficiency of the various methods employed in inducing labor, nor are clinicians agreed as to the maternal and fetal morbidity and mortality in cases of induced labors.

Morton,² after reviewing 160 cases of induction of labor by employment of the hard rubber bougie method, states that in 82.5 per cent of the cases this method resulted in success; 72.7 per cent of these cases delivered spontaneously. In this series the majority of cases of fetal deaths occurred in the cases of toxemia of pregnancy and cases of prematurity. He says: "The bougie is superior to the bag for the induction of labor provided a sufficiently large bougie is employed and the bougie should be employed whenever haste is not essential. The bag is more efficient in bringing about the onset of labor, but it is attended by a definitely greater fetal mortality and maternal morbidity. When fetal death follows the use of the bag it is usually the result of prolapse of the cord. Maternal mortality is the same with either method."

In 1919, Reis³ reported a series of 500 consecutive cases of induced labor in 430 patients. These inductions were undertaken as a means of comparing the various methods of induction of labor now being employed. All of his cases were above the thirty-eighth week. His observations revealed pituitrin alone to be the least efficient—31 per cent. Employment of castor oil alone resulted in 67 per cent success. Castor oil and quinine resulted in 90 per cent success. Introduction of a bag produced labor in 92 per cent of the cases. Reis believes that the incidence of operative delivery is not affected by induction of labor as 73.5 per cent of his cases delivered spontaneously. In his series of cases, the gross morbidity, exclusive of bags, was 11.3 per cent and the corrected morbidity was 2.8 per cent.

In a series of 240 cases of induction of labor at the Royal Victoria Hospital, Mon-

treah, introduction of a bag was resorted to in 86 per cent of the cases and the bougie in 14 per cent of the cases. From these cases Fletcher⁴ concluded that: "In primiparae the time taken for induction by either method was doubled in comparison with multiparae." Reis, on the other hand, believes that the response in each group is about equal.

This paper deals with a review of fifty cases of bougie induction of labor and twenty cases of bag induction of labor at the University of Michigan Hospital.

Of the fifty cases of bougie induction of labor twenty-seven were in multiparae and twenty-three were in primiparae. Considering the twenty-seven multiparae we found the most common indication of induction of labor was toxemia of pregnancy, eighteen cases of our series being induced because of that complication. Four cases were induced because of eclampsia and one case each because of pregnancy complicated by severe diabetes, placenta previa, advanced pulmonary tuberculosis, ventral hernia with intestinal obstruction and subacute bacterial endocarditis. Of this series five were before the twenty-eighth week of gestation; fifteen were between the twenty-eighth and thirty-fourth week of gestation and seven after the thirty-fourth week. The bougie was in the uterus on the average of eleven hours. The average length of labor was eleven hours and ten minutes. There were twenty-three successful cases or a percentage of 85.2 per cent. Of the twenty-seven cases there were four morbid cases, a temperature of 100.4° F. for two consecutive days following delivery being considered morbid. However, one of these cases entered the hospital with a temperature of 100.4° F. due to subacute bacterial endocarditis. In another case version and extraction were resorted to because of a transverse presentation. The corrected morbidity, therefore, becomes 7.47 per cent. There were two maternal deaths in this group, making a maternal mortality of 7.47 per cent. One of these deaths was attributed to puerperal septicemia. Autopsy on this patient revealed post-partum diphtheritic endometritis due to retained membranes. The other fatality occurred four days following delivery after many eclamptic convulsions. In this group of twenty-seven cases there were seven fetal deaths. Of these, three were nonviable.

BOUGIES

	Multiparæ	Primiparæ	Average
Av. Hrs. Bougie In.....	11 hours	16 hours	13 hours 30 min.
Av. Hrs. Labor.....	11 hours 18 min.	18 hours	14 hours 39 min.
Failures (4).....	14.8 %	17.39%	16.09%
Morbidity corrected.....	11.11%	17.39%	14.25%
Mortality (maternal).....	7.5 %	4.34%	5.87%
Mortality (fetal).....	14.8 %	17.39%	16.09%
Operative Interference.....	11.11%	8.69%	9.9 %

BAGS

	Multiparæ	Primiparæ	Average
Av. Hrs. Bag In.....	5 hours 48 min.	7 hours 45 min.	6 hours 45 min.
Av. Hrs. in Labor.....	7 hours 30 min.	14 hours 30 min.	11 hours
Failures.....	None	10%	5%
Morbidity.....	20%	10%	15%
Mortality (maternal).....	None	None	None
Mortality (fetal).....	10%	30%	20%
Operative Interference.....	10%	40%	25%

Excluding the three nonviable deaths the fetal mortality rate becomes 14.8 per cent. The remaining four cases were all stillborn; of these, three were just at twenty-eight weeks and one at thirty-four weeks. Three were in cases of eclampsia and one in a case of pre-eclamptic toxemia. The incidence of operative interference was not increased as 88.89 per cent of the cases delivered spontaneously. In the cases of operative interference all the babies survived.

Upon reviewing the twenty-three cases of induced labor in primiparæ we found the most common indication of induction was toxemia of pregnancy, fourteen out of the 23 cases having been induced because of that condition. Seven cases were induced because of eclampsia. One case was induced because of acute yellow atrophy of the liver and one because of pyelitis of pregnancy. Of the twenty-three cases, four were induced between the twenty-eighth and thirty-fourth week of gestation. In this group of cases the bougie was in the uterus on an average of sixteen hours. The average length of labor was eighteen hours. There were nineteen successful inductions giving a percentage of 82.6 per cent success. Of these cases there was a total morbidity of 52.17 per cent. However, the morbidity in one case was attributed to a major pulmonary embolus with infarction; in three cases the morbidity was attributed to kidney infection and in four cases operative interference was resorted to so that the corrected morbidity becomes 17.39 per cent. There was one maternal death due to acute yellow atrophy of the liver. The maternal mor-

tality in this group, therefore, is 4.34 per cent. There were eight fetal deaths in this group. Four of these were non-viable. This gives a fetal mortality of 17.39 per cent. The remaining four cases of fetal deaths were all stillborn; three of these were in patients with eclampsia between the thirty-second and thirty-fourth week of gestation, and one in a patient with pre-eclamptic toxemia at the thirty-second week of gestation. There were two cases of operative interference so that the percentage of spontaneous deliveries in this group becomes 91.31 per cent.

Of the twenty-cases of bag induction there were ten multiparæ and ten primiparæ.

Considering the ten cases of induction of labor in multiparæ we found that three were in patients who were post term and who had contracted pelvis; one was a case of eclampsia; one of pregnancy complicated by manic depressive insanity; one of pregnancy complicated by pulmonary tuberculosis and one in placenta previa. Seven of these cases were induced between the twenty-eighth and thirty-sixth week of gestation and three after the thirty-sixth week of gestation. The bag was in the uterus on an average of five hours and 50 minutes. The average length of labor was seven hours and 30 minutes. There were no failures in this group. There was a total morbidity of 30 per cent. However, the morbidity in one case was attributed to advanced pulmonary tuberculosis so that the corrected morbidity is 20 per cent. There were no maternal deaths. There was one fetal death. This

was a case of placenta previa. The labor was terminated by version and extraction. The fetal mortality, therefore, in this group is 10 per cent. Ninety per cent of these cases delivered spontaneously.

Of the ten cases of bag induction of labor in primiparæ, four were in patients who were post term; three were in cases of pregnancy complicated by toxemia; two were cases of eclampsia and one was induced because of low implantation of the placenta with bleeding. Five cases were induced between the twenty-eighth and thirty-sixth week of gestation and five after the thirty-sixth week. The bag was in place on an average of seven hours and 45 minutes. The average length of labor was fourteen hours and 30 minutes. The bag was successful in inducing labor in 90 per cent of these cases. The total morbidity of this group was 50 per cent. However, in one of the morbid cases dilatation of the cervix was completed manually and a mid-forceps application resorted to; one was in a case complicated by a severe postpartum hemorrhage which was controlled by packing the uterus with gauze; one was in a patient in whom the morbidity was attributed to mastitis and one in a patient whose labor was terminated by a mid-forceps application because of prolapse of the cord. The corrected morbidity, therefore, becomes 10 per cent. There were no maternal deaths in this group of ten primiparæ. There were three fetal deaths or a percentage of 30 per cent. These were all stillborn; one of these fetal deaths was attributed to prolapse of the cord; one was

due to syphilis and the third occurred in a case of severe toxemia of pregnancy. In the latter case the fetal heart was not heard at the time of introduction of the bag. Sixty per cent of this series of cases delivered spontaneously.

The number of cases reviewed is too small to warrant the drawing of definite conclusions but the above review indicates that:

1. Multiparæ respond to bougie induction of labor in a slightly greater percentage of cases than do primiparæ.
2. Multiparæ respond to bag induction of labor in a definitely greater percentage of cases than do primiparæ.
3. The bag is a more rapid method and a more certain method of inducing labor than is the bougie.
4. The morbidity in bag induction of labor is slightly greater than in the bougie method.
5. The fetal mortality is greater in bag induction of labor than in the bougie method.
6. The incidence of operative interference is not increased in labors induced by the bougie method.
7. The operative interference incident with bag induction of labor is nearly three times as great as in cases induced by the bougie method.

BIBLIOGRAPHY

1. Ivens, Frances: *Lancet*, Vol. 11, 1925.
2. Morton, Daniel: *Am. Jr. Ob. & Gynec.*, 1929.
3. Reis, Ralph A.: *Am. Jr. Ob. & Gynec.*, 1929.
4. Fletcher: *Canadian Med. Assn. Jr.*, July, 1929.

RELATIONSHIP OF THE PRIVATE MEDICAL PRACTITIONER TO PREVENTIVE MEDICINE

Sir Arthur Newsholme, Birmingham, England, outlines briefly developments and changes during recent decades, in Europe generally and particularly in Britain, in preventive as related to clinical medicine, and the influence of this altered orientation on the work of the private medical practitioner. His sketch of European developments is prefaced by the following postulates: 1. Neither instructed public opinion nor the medical conscience, which in this connection is the advance-guard of Christian civilization, can tolerate the continuance of neglected sickness. 2. Medical care in its widest sense must be made available for all, as an important element in securing maximum efficiency and happiness in a civilized community. 3. Gaps and imperfections in present medical services must be made good and medical care must be of a quality which does not lack in any essential respect all that is necessary for expeditious recovery or for comfort, if recovery is

unattainable. 4. Health is worth whatever expenditure is efficiently incurred in its maintenance or to secure its return. 5. In present circumstances, both in America and in Europe, adequate scientific medical service has become unattainable by isolated or family effort standing alone, for a high proportion of the total population. 6. For a large portion of the total sick population measures must be, and in part are already, organized to assist in providing necessary medical services, the sources available being private charity, communal taxation, and provident insurance for future needs. 7. There is need to organize such coöperative work as will secure that specialism, which necessarily is concerned mainly with the disease, is not allowed to submerge the wider and wiser outlook of the general practitioner who is concerned with the patient himself. 8. There is often needed a study of the patient from a psychic, social, economic and occupational standpoint, if his illness is to be accurately diagnosed and satisfactorily treated. 9. Modern medicine is becoming increasingly physiologic and decreasingly pathologic.—*Journal A. M. A.*

ACTINOMYCOSIS PRIMARY IN OVARY*

CASE REPORT

C. E. BOYS, M.D., F.A.C.S.

KALAMAZOO, MICHIGAN

A farmer's wife, thirty-six years old, the mother of six children, aged sixteen to six, was admitted to Sturgis Memorial Hospital December 26, 1929. She entered the hospital rather reluctantly, feeling that she was not sick enough to warrant hospitalization. One month before this date she had accidentally felt a bunch in the lower abdomen for the first time, and this had been preceded by a few days of pelvic pain of only moderate severity. The patient had always been very well and able to do the usual work of a farmer's wife, except when she had a severe attack of influenza in 1918.

Parents were living and well at seventy-three and seventy-one respectively. She had two brothers living and well, but one brother had died of pneumonia and one of tuberculosis in early adult life. She also had five sisters living besides one who died at fourteen years of age from heart trouble.

Examination showed the patient to be a woman of average stature and nutrition but showing a moderate degree of anemia. Pulse 100. Temperature 99.6. Respiration 20. The general examination was negative except for the following:

1. A moderate sized diffuse enlargement of the thyroid which was of a soft consistency.

2. A hard egg-sized mass in the anterior abdominal wall about half way between the umbilicus and pubis. The mass was rather freely movable and seemed to be a part of a larger mass which could be palpated in the pelvic region. This deeper mass was only moderately tender and suggested a fibroid.

3. The cervix was much hypertrophied but not grossly malignant. The uterus was three or four times normal size and seemed to become a part of a larger mass filling the cul-de-sac. Urine examination showed no pathology. Blood examination was not made. A tentative diagnosis of fibroid of uterus was made and operation for same was advised.

On opening the abdomen by median suprapubic incision it was discovered that the mass previously palpated was a very hard egg-sized tumor, evidently having its origin in the omentum, then later invading the parietal peritoneum, the deep fascia and extending nearly through the rectus muscle. It also extended inwardly through the serous coat of the colon. The lower edge of the omentum was firmly adherent to a pelvic mass.

The uterus was four or five times normal size, apparently from subinvolution, but the appearance was otherwise normal. There was a lemon-sized abscess of the left tube and ovary, surrounded completely by a loop of inflamed sigmoid. This contained thick odorless yellow pus not unlike that often found in pyosalpinx. The adhesions were notably tough and separated with unusual difficulty. The right tube and ovary were normal. The appendix was large and kinked but otherwise normal. There were no nodules in the liver, mesentery or elsewhere in the peritoneum.

At this time a diagnosis of cancer of the omentum invading the abdominal wall, and pyosalpinx, was made. The incision was extended upward about the tumor, removing it entirely. The mass was with difficulty separated from the colon without entering the deeper layers. A supravaginal hysterectomy with removal of the left tube and ovary was also done. Two large rubber tissue drains were placed down to the cul-de-sac and the wound then closed with much difficulty on account of the width of tissue removed with the tumor.

The patient made the usual recovery of a pelvic drainage case except that the wound discharged some

at the point of drainage for five or six weeks. She left the hospital in three weeks.

It was not until the pathological report was returned by Dr. A. S. Warthin a few days after operation that the true nature of the condition became known. The report read as follows: "Tissue from abdominal wall shows multiple subacute abscesses containing colonies of actinomyces—actinomycosis. Uterus shows slight glandular and interstitial hyperplasia of endometrium with chronic infection. Multiple chronic tubo-ovarian abscesses with colonies of actinomyces—actinomycosis. The abscesses are in the ovary and on the broad ligament rather than in the tube. Prognosis in this case is very grave. This patient is liable to develop a pyemic actinomycosis."

As soon as this diagnosis was received, the patient was given potassium iodide regularly, both before and after leaving the hospital. A report was received from the family physician on March 3, 1930, stating that the patient was still very weak; had been in bed most of the time since leaving the hospital, and that potassium iodide had been administered up to seventy-five grains a day until one week previous, when it was discontinued because of a severe attack of diarrhea accompanied by violent rhythmic colicky pain in the region of the gall-bladder. There then gradually developed nausea and vomiting and marked abdominal distension. These symptoms became so violent and unremitting that she was returned to the hospital on March 27, 1930, thirteen weeks after the first operation.

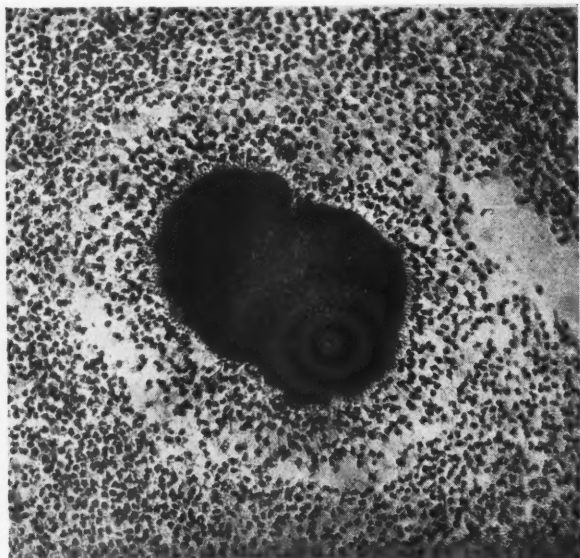
On this date the patient looked very ill. The pulse was 140 but regular. The abdomen was tympanitic throughout and was undulating with peristaltic waves. No palpable masses and very little tenderness were present. Bimanual examination showed the cervix to be fixed with extraordinary firmness but no pelvic masses were palpable. There was a moderate degree of pallor to skin but no cachexia or jaundice. The original wound was closed and dry. A diagnosis of incomplete intestinal obstruction in the large bowel was made.

On opening the abdomen at this time it was noted that all intestines were greatly distended with gas down to the lower sigmoid, where obstruction was effected by unusually tough adhesions at the site of the original tubo-ovarian abscess. The intestinal walls were smooth, of normal color and free from edema. A walnut sized nodule was found in the omentum under the left diaphragm. No other nodules were found. On section the nodule showed hard, glistening, white, cut surfaces grossly having the appearance of carcinoma. There was no visible

*Read before the Section of Obstetrics and Gynecology of the Michigan State Medical Society at its Annual Meeting in Pontiac, Michigan, Sept. 23-24, 1931.

pus. The abdomen was closed without drainage after the subdiaphragmatic nodule, the right tube and ovary were removed, and the pelvic adhesions released as well as possible.

Four stormy post-operative days were followed by death. A post-mortem examination—abdomen only—was made soon after death. The wound had com-



Colony of actinomycetes in abscess. Author's case. Photomicrograph by Dr. A. S. Warthin.

pletely separated except as held together by the skin sutures. There was a yellowish sero-purulent exudate throughout the whole abdomen, with accumulations in the pelvis. There was an abscess at the site of the subdiaphragmatic nodule evidently incompletely removed at the last operation. This was apparently the source of the generalized peritonitis. The intestines were enormously distended with gas but no obstruction was present. Dr. Warthin's report on the examination of the nodule was as follows: "Chronic purulent omentitis—omental abscess. Probably actinomycotic but no colonies are present. Cystic follicles in ovary."

There are several reasons for reporting this case. The first is the rarity of actinomycosis involving the female genitalia. Helwig⁸ reports only thirty cases found in the literature up to 1925. In these he observed that the ovaries alone were involved in only twelve instances, the ovaries and tubes in four, the tubes alone in four, and the remainder in various combinations. Barth¹ in 1928 quotes Nurenberg, who had at that time collected all the reported cases of actinomycosis of the female genital tract or its parts, and he was able to find but fifty. Undoubtedly many others passed by unrecognized on account of their similarity to other more common conditions. The number is sufficient, however, to warrant more care in its recognition.

Another reason is the similarity of actinomycosis in its *early* stage to malignancy.

In this case a post-operative diagnosis of malignancy was made until the pathological report was returned. Boyd² mentions this similarity in his Surgical Pathology. Helwig, Soderlund and several other authors have made the same observation. The density, toughness and white, hard, glistening cut surfaces, as well as its tendency to invade tissues and to become fixed, suggest this point. *Late* in its course it is very similar to ordinary tubal abscess. Grossly the pus usually cannot be differentiated. The color, consistency and amount may be not unlike those of the commoner infections, and even the odor may be that of the colon bacillus because of mixed infection.

A third reason is the extraordinary toughness found in the adhesions from actinomycosis. This is due to its pronounced tendency to cause proliferation of connective tissue.

The late arrival of symptoms is noteworthy. This patient did not consider herself seriously ill, nor was this thought justified by her physical findings, yet the disease was even then far advanced. Symptoms may be present from two weeks to thirteen years, usually from three to twelve months.

Considerable speculation exists as to the mode of entrance. Hazelhorst reports a case where the infection was apparently introduced by a curet which punctured the uterus during a curettage for post-abortive endometritis. Most observers agree with Wolff and Israel,¹³ however, that the organism is probably endemic in the flora of the intestine and only becomes manifest when it invades the muscular or serous coat through an abrasion in the mucosa. Further, that it extends by invasion and by the blood stream, but rarely if ever by the lymphatics; this latter being a strong differential point in contrast to tuberculosis and malignancy.

Sixty per cent of actinomycosis cases occur in neck and head; twenty per cent in gastro-intestinal tract; fifteen per cent in lungs; and five per cent in skin. Most of the abdominal cases appear in the appendix. Hüffer⁹ states that most pelvic involvement comes from the appendix through its contiguity with the uterine adnexæ. In our own case the ovary, on account of its matured abscess and the negative microscopical findings in the tube, undoubtedly was the primary focus. Whether it entered through the blood stream or sigmoid could not be demonstrated. The adherent sigmoid might

have been the portal of entrance to the enveloped ovary, and on the other hand the sigmoid may have been only inflamed secondarily from the tubo-ovarian abscess. The appendix showed no evidence of involvement.

The veins of the adherent omentum probably were the routes of spreading from the ovary to the omentum, whence it progressed by direct invasion well into the abdominal wall. That the omental nodules were younger is suggested by the fact that they were hard and pusless on section at a time when the ovary had become a well developed abscess. Entrance by way of the genital tract can reasonably be excluded in this case as there was no involvement of the uterus or tubes on microscopical section.

Noteworthy in this case is the failure of potassium iodide to cure or to prevent the advancement of the disease even though the drug was administered in quantities up to seventy-five grains a day. Harbitz and Grandel⁷ showed that potassium iodide up to two per cent in culture media failed to inhibit growth of actinomycosis bovis. The drug has nevertheless been used by practically all writers, although very few of them depend upon it solely. Both Collier³ and Sistrunk¹² give as much as two hundred grains three times a day.

Desjardins⁴ considers radiology the most important therapeutic agent but also gives the iodide. New and Figi¹⁰ advise the drug but advise it to be accompanied by drainage and radiology. Radiology is also approved by Shugt.¹¹ Sistrunk¹² advises opening the abscess widely, packing it firmly with iodiform gauze, after swabbing it out with tincture of iodine. This pack is left in eight or ten days to insure against early closure of the opening. He then gives the iodide as stated above and also uses X-ray.

Other remedies have also been used, such as methylene blue, copper salts, arsphenamine and vaccines. Epstein⁵ used non-specific protein therapy consisting of intravenous administration of typhoid and paratyphoid alpha and beta vaccines. This case improved and remained so although it had previously been treated by potassium iodide, X-ray and surgical drainage without appreciable benefit.

Geymuller⁶ has used yatren-casein (iodoxyquinoline-sulphonic acid). The number of curative agents used, however, argues against the specificity of any one of them.

The nature and course of the disease are of interest. Four stages may be described:

1. Tumefaction — hard, fixed masses without the usual signs of inflammation.
2. A later softening with abscess formation; the tissues here resembling a sponge saturated with pus.
3. Sinus formation follows the development of the abscesses.
4. Steady progression of the disease with the development, in the late stages, of the symptoms of chronic infection, namely fever, anemia, wasting and death.

Actinomycosis is a slow worker and a prolific fibrin producer, forming tough adhesions. It is a very fatal disease. In the thirty-three cases collected by Helwig,⁸ twenty-three patients died and only ten were reported as recovered. Secondary bacterial invasion is a favorable occurrence as actinomyces are very susceptible to bacteria and are killed by them. The best known cure is complete surgical removal; but this is often impossible, as in our own case, because the diagnosis frequently cannot be made until the disease has progressed beyond the limits of surgical possibilities.

BIBLIOGRAPHY

1. Barth, Hermann: Actinomycotic parametritis and its method of origin. *Arch. f. Gynaek. Berl.*, 1928, 134: 310-321.
2. Boyd, William: *Surgical Pathology*. W. B. Saunders Company, 1929.
3. Collier, F. A., and Adie, G. C.: Actinomycosis in man. *Jour. Mich. Med. Soc.*, Grand Rapids, 1924, 23:367-372.
4. Desjardins, A. U.: Radiotherapy in actinomycosis. *Radiol.*, St. Paul, Minn., 1928, 11:321-332.
5. Epstein, N., and Schoenholz, P.: Actinomycosis. *Calif. and West. Med.*, San Francisco, 1929, 30:395-399.
6. Geymüller, E.: A case of actinomycosis of the internal organs. *Schweiz Med. Wochenschr.*, Basel, 1928, 45: 635-637.
7. Harbitz and Grandel: *Beitr. z. path. Anat. u. x. allg. Path.*, 1911, 1:193.
8. Helwig, Ferdinand C.: Actinomycosis of the ovary and tube. *Surg., Gynec. & Obst.*, Chicago, 1925, 40:502-509.
9. Hüffer, Ernst: Actinomycosis of the female genitals, especially the uterus. *Monatschr. f. Geburtsh. u. Gynaek.*, Berlin, 1922, 58:197-210.
10. New, G. B., and Figi, F. A.: *Surg., Gynec. & Obst.*, 1923, 37:617-625.
11. Shugt, P.: Actinomycotic parametritis. *Monatschr. f. Geburtsh. u. Gynaek.*, Berlin, 1925, 69:192. *Abst. Jour. Am. Assn.*, Chicago, 1925, 85:157.
12. Sistrunk, W. E.: Sinuses caused by actinomycosis. *Surg. Clin. N. Am.*, Phila., 1929, 9:72-74.
13. Wolff, Max, and Israel, James: *Arch. f. Path. Anat.*, etc., Berl., 1891, 125:11-59.

SPINAL ANESTHESIA IN CASES OF EMERGENCY SURGERY

EARL GEORGE KRIEG, M.D.†

DETROIT, MICHIGAN

This paper presents a number of surgical emergency cases of more or less serious nature which have been operated upon under spinal anesthesia. The reaction of these cases to the anesthetic was studied.

The material was selected from the cases admitted to the Surgical Service at the Detroit Receiving Hospital during the period of a year (July, 1929-1930). The cases were distributed as shown in Table I.

TABLE I

Appendicitis, acute, simple.....	55
Appendicitis with perforation and peritonitis.....	30
Appendiceal abscess	13
Intestinal obstruction, incarcerated hernia.....	23
Intestinal obstruction, other causes.....	18
Acute visceral trauma (gunshot, stab, contusion).....	52
Acute perforated gastric or duodenal ulcer.....	21
Acute ectopic pregnancy.....	2
Crushing amputations, lower extremities.....	3
B. Welchii infections, lower extremities.....	3
Acute hemorrhagic pancreatitis.....	1
Ruptured aneurysm, iliac artery.....	1
Total	222

The hospital is the charitable institution of the city and receives a good share of these patients from the indigent classes for whom hospitalization was the last resort. Medical advice was seldom sought early in the disease unless pain drove them to the emergency clinic. A gauge of the seriousness of these cases will be found in Table II.

TABLE II. AVERAGE TIME ELAPSED BETWEEN ONSET OF SYMPTOMS AND HOSPITALIZATION

Acute appendicitis, simple.....	1.4 days
Acute appendicitis with perforations and peritonitis	3.3 days
Appendiceal abscess.....	6.0 days
Strangulated hernia.....	20.1 hours
Acute perforated ulcers.....	6.0 hours
Intestinal obstructions.....	2.8 days
Gunshot, stab, and contusion injuries.....	2.0 hours

Approximately.

The most serious group of the entire series were those suffering acute visceral trauma, of which 79 per cent were gunshot wounds; twenty-three of these cases suffered from two to five visceral perforations, thirteen cases suffered from five to ten perforations, six cases suffered more than ten perforations. Nine cases had no visceral injury.

†Dr. Krieg was graduated from Detroit College of Medicine and Surgery in 1925; interne, Grace Hospital, one year; Surgical Resident, Jefferson Clinic, one year; Gynecological Resident at Receiving Hospital, two years; Surgical Resident at Receiving Hospital, one year.

although the knife or bullet had pierced the abdominal wall. The relative frequency of the organs involved were as shown in Table III.

TABLE III

Perforations of colon.....	20 cases
Perforations of ileum-jejunum.....	20 cases
Combined involvement of colon-(jejunum)-(ileum)	11 cases
Stomach	9 cases
Spleen	2 cases
Liver	17 cases
Bladder	2 cases
Severe hemorrhage (abdominal).....	8 cases
Hemothorax	12 cases

Complications were frequently seen, consisting of pulmonary infection, shock, hemorrhage and cardio-renal disease, and when operation was advisable the selection of the proper anesthetic was of evident importance. At the beginning of the year (July, 1929-1930) spinal anesthesia was used routinely in those cases with pulmonary or urinary complications, but gradually its use was extended to most cases requiring emergency surgery.

The anesthetic agent used in practically every case was procaine crystals dissolved in the patient's spinal fluid. The youngest patient was six years, the oldest seventy-three years of age.

The instrumentarium consisted of a syringe with fine gauge needle about 1.5 inches in length for local anesthetization; a so-called Pitkin spinal needle; a 10 c.c. Luer syringe; procaine crystals and procaine solution.

The dorso-lateral position was used in each case, and the site of injection was selected in the lumbar region at the interspace of greatest prominence up to, and including, the second lumbar interspace. The skin and paravertebral tissues and the dura mater were slowly anesthetized, after which painless lumbar puncture was done and the

needle manipulated until a steady flow of fluid was obtained. The 10 c.c. Luer syringe had previously been "loaded" with the dry procaine crystals; it was taken up and attached to the dripping spinal needle from where the required amount of fluid was slowly withdrawn; it was then disconnected, gently agitated to dissolve the crystals, and the resulting solution injected. Barbotage was not necessary.

Our method of reaching the desired level of anesthesia was obtained by varying the rate, the amount and the concentration of the injected drug. Our experience leads us to employ the schedule in Table IV for more consistent results.

TABLE IV

Level desired	Procaine crystals	Amt. spinal fluid	Rate of injection (Approx.)
Perineum and lower extremities	75-100 mg.	2-3 c.c.	Slowly without force
Umbilicus	100-150 mg.	4-5 c.c.	1 c.c. per second
Complete abdomen	200-300 mg.	7-8 c.c.	1½ c.c. per second

The upper limits of amounts of both fluid and crystals were used in the tall asthenic type of individual, the lesser amounts in the hypersthenic individual. This method, although empirical, was more satisfactory than the milligram-per-pound method.

We stressed adequate preoperative preparation in each case and attempted to revive the patient to as near his normal state as possible. Enough time was allowed for the administration of this preparation and for the expected result to appear. In our most serious cases this period occasionally exceeded one hour although one case required twenty-four hours.

Morphine and hyoscine were given to practically every case in physiologic doses except to the young and very old, preferably one hour before operation.

The vasomotor stimulants, ephedrine and epinephrine, were not given routinely but only as an unstable vasomotor system required support and then in sufficient amounts to produce the desired result. We did not use either ephedrine or epinephrine

when gross uncontrolled hemorrhage was present, believing that all stimulants increased the hemorrhage. When the bleeding vessel was ligated treatment was carried on as in any other case without this complication. These stimulants, when indicated, were given about one-half hour before, and repeated at, the administration of the anesthetic. We found that cases of advanced intestinal obstruction, B. Welchii infection and extensive visceral trauma all required this type of treatment routinely. Not infrequently one of our patients did not respond to even repeated doses of ephedrine, but epinephrine always produced a response. Toward the end of this series epinephrine was more frequently used than ephedrine. The Trendelenburg position was used in almost every case in some degree.

All hydrotherapy was given intravenously. Normal saline solution with 5 per cent glucose was used most frequently in amounts varying from 1,000 c.c. to 2,000 c.c. or more; all cases of visceral trauma, perforated ulcers, crushing injuries and extreme cases were given this treatment routinely. The cases of intestinal obstruction showing dehydration, vomiting or other toxic signs were given a 5 per cent or 10 per cent sodium chloride and a 5 per cent glucose solution.

Cases with severe hemorrhage or shock that did not respond to the saline and glucose were given transfusions of whole blood in sufficient quantities to bring back color and a steady, full pulse; operation followed soon afterward. We employed the modified Unger apparatus, as devised by Brines, which allowed us to give whole unmodified blood directly in amounts ranging from 500 c.c. to 1,500 c.c. in a five or ten minute period.

A short stop at the fluoroscopic room on the operating floor with gunshot cases, when the course of the bullet was unknown, greatly aided in shortening our operative time.

Observations regarding: (I) the success of anesthetic, (II) the behavior of the gut during the operation, (III) blood pressures, (IV) the convalescent period and (V) deaths during anesthesia will be discussed in order.

I. SUCCESS OF ANESTHETIC

In the entire series there were four failures in obtaining a satisfactory anesthesia at

the first attempt, but a second administration produced the desired result. In five cases no spinal fluid was obtained at puncture but good anesthesia resulted when the procaine crystals were dissolved in sterile normal saline solution and injected as described in the above routine.

From the angle of surgical approach, the advantages of "the quiet abdomen" were especially noticeable during the operation upon the emergency case. Exposure, manipulation, evisceration, spreading of gross contamination, the operative time and use of sponges and retractors were reduced to a minimum; these were tangible and important factors influencing the patients' progress.

II. BEHAVIOR OF THE GUT

It was observed that under two conditions the gut became immobile either locally or generally, depending upon the extent of the injury. A localized peritonitis, such as that found near a recently ruptured appendix or an acute injury, due to gunshot, or ulcer, caused a local paralysis of the bowel. Peristalsis began a short distance away from the injured segment and gradually became more intense until the hypermobile type was present again. When the inflammation was generalized or the injuries involved the entire bowel tract, no peristalsis was observed. Suturing of a bowel perforation caused local spasm but peristalsis did not return during operation. Soiling, due to peristalsis, was not observed in any case even when complete transection had taken place. The bowel forming the wall of the appendiceal abscesses did not show peristaltic movements.

We believe that the trauma or inflammation paralyzed the intrinsic mechanism and prevented the nervous impulse from reaching the muscular coat. It is on the basis of these observations that we do not believe that spinal anesthesia is contra-indicated when acute intestinal trauma or inflammation are present.

III. BLOOD PRESSURES

In no single case of the entire series were we able to predict the behavior of the blood pressure or the reaction of the patient from the initial blood pressure taken before operation. In an analysis of the blood pressure records of groups of cases (appendiceal group, ulcer group, etc.) we were able to obtain material for consideration.

APPENDICITIS

Preoperative vasomotor stimulants were not used in the appendicitis cases and only twenty received them during operation in the beginning of the series. The drop in systolic pressure occurred during the first 15 or 30 minutes and then returned to normal; no systolic pressure lower than 64 mm. Hg. was recorded, the majority dropping to 90-100 mm. Hg. before returning to normal. The pulse pressures remained within normal limits. It was observed that the greatest fluctuation of blood pressure occurred in those cases having the greatest absorption of toxic products.

In the cases of simple acute appendicitis, the average blood pressure and pulse rate was 119/77 mm. Hg. and 90 per minute; the average drop in systolic pressure was 17.2 mm. Hg.

In the cases of appendiceal abscess the average blood pressure and pulse rate before anesthesia was 121/78 mm. Hg. and 101 per minute; the average drop in systolic pressure was 16 mm. Hg.

In cases of acute appendicitis with perforation and local peritonitis the average blood pressure and pulse rate before anesthesia was 125/76 mm. Hg. and 112 per minute; the average drop in systolic pressure was 25 mm. Hg.

PERFORATED ULCERS

Preoperative stimulants were not given to the cases of acutely perforated duodenal or gastric ulcer; nine cases received them during the operation. The average blood pressure and pulse rate taken before anesthesia was 132/84 mm. Hg. and 98 per minute. The average initial drop in systolic pressures was 26 mm. Hg. Full recovery took slightly longer than 30 minutes but less than 45 minutes. The lowest systolic pressure recorded during operation was 68 mm. Hg. The pulse pressure remained within normal limits for practically all cases.

INTESTINAL OBSTRUCTION

The average blood pressure and pulse rate taken just before administration of the anesthetic in all cases of acute intestinal obstruction was 139/93 mm. Hg. and 101 per minute, the highest was 186 mm., the lowest 110 mm. Hg. We found that the reaction of the blood pressure after administration of the anesthetic formed a basis of dividing these cases into three definite groups

that corresponded to the clinical findings. These groups we designated as follows: (a) the early non-toxic group; (b) the early toxic group, as represented by the majority of strangulated herniæ; and (c) the advanced toxic group. Blood pressure fluctuations in the first (a) group compared favorably with those in the appendiceal series. In the second group (b), the average drop in the systolic pressure following anesthesia was 38 mm. Hg., which did not recover until after a 45 minute period; no reading was lower than 52 mm. Hg. systolic, the majority dropping to 90 mm. Hg. The average drop in pulse pressure was 8 mm. Hg. for this group. In the third group (c), the average initial drop in systolic pressure following anesthesia was 40 mm. Hg., the greatest of any of the series. The readings were very erratic, abrupt falls in pressure with slow recovery were the rule. No case showed recovery at the end of a 30 minute period even when large doses of stimulants were given. In every case of this group the pulse pressure was below normal from 10 to 18 mm. Hg. Further immediate observation was stopped by returning the patient to the ward. Loss of vasomotor stability was apparently in direct proportion to the degree of toxicity resulting from the obstruction. One of the deaths during anesthesia occurred in this latter group.

VISCERAL TRAUMA

The material obtained from the cases of acute visceral trauma was difficult to correlate because of the varying degrees of trauma encountered. Practically every case was given preoperative stimulants, with the exception of the acute uncontrollable hemorrhage cases. One-half of the cases were given stimulants during operation, the average number of doses being four (ephedrine gr. $\frac{3}{4}$ or epinephrine m X V). The average blood pressure and pulse rate taken before operation was 133/83 mm. Hg. and 97 per minute. In one case no blood pressure was obtained and in another the systolic pressure was recorded as 30 mm. Hg., while the diastolic was not obtainable; both cases were in good general condition and were operated because of the urgency of the pathology; both were successfully treated. The average initial drop in the systolic pressure of the more serious cases (two-thirds of the group) was 34 mm. Hg. and recovery did not take place in a 30 minute period.

The average drop in pulse pressure was 12 mm. Hg. Clinical study of the cases suffering moderate shock before the preoperative treatment did not suggest that the anesthetic increased the seriousness of the patients' general condition; this was not true, however, of the advanced cases. Three cases died in this group during anesthesia; all had large intra-abdominal hemorrhages.

In three cases of traumatic amputation of the lower extremities with severe shock and three cases of extensive B. Welchii infection requiring amputation, spinal anesthesia involving these members only did not apparently affect the blood pressure or the clinical progress of the case.

Comment: It was noted that the blood pressure of the abdominal cases apparently followed that observed when spinal anesthesia was given to a chronic case except when severe recent hemorrhage, severe toxicity or severe shock were complications. Either one or any combination of these complications that might have been present before the preoperative treatment had brought back the blood pressure and general condition within range of normal, caused a delayed recovery of the initial drop in systolic pressure and the pulse pressure in proportion to the severity of these complications. When these complications had been marked, death occurred during anesthesia in five of our cases.

These data strongly suggest that the seat of the trouble was in the vasomotor system, which had been rendered both unstable and inelastic by the complications mentioned. When these complications were of the advanced type, the burden of a spinal anesthetic placed the patient in definite additional danger.

IV. CONVALESCENCE

The contrast between cases involved by similar surgical conditions and operated upon under spinal and ether anesthetics was as marked in the immediate convalescent period as during the operation. Conservation of the patient's vitality appeared to be the outstanding clinical observation in the majority of cases undergoing a spinal anesthesia.

Post-operative complications usually accredited to the anesthetic were found as indicated in Table V.

Bronchitis appeared most frequently between the second and the fifth days and in-

volved 13 per cent of the cases. The case of severe headache was of three days duration and was controlled by magnesium sulphate enemas. The case of meningismus began to have nervous symptoms the third day; at a diagnostic spinal puncture, blood-tinged spinal fluid was drained and the symptoms cleared up entirely in three days. We believe that the bleeding may have been caused by venous puncture at the time of administration of the anesthetic.

TABLE V. POST-OPERATIVE COMPLICATIONS
(222 CASES)

Type of Case	Bronchitis	Urinary Retention (Medical)	Urinary Retention (Catheter)	Delirium Tremens	Atelectasis	Headache	Meningismus	Uremia	Cardiac Decompensation
Gunshot and stab	8	2		1					
Appendicitis	15	16	1		1	1	1		
Intestinal Obst.				1					
Strang. Herniæ	4	1	1	1				1	1
Ulcer	2								
Total	29	19	2	3	1	1	1	1	1

The majority of these patients were obliged to take care of themselves following their discharge from the hospital and for that reason the convalescent period was somewhat prolonged. The average stay for simple acute appendicitis was 10.5 days; without complications (wound infections, etc.) 8.8 days. Appendiceal abscess, 28.2 days. Appendicitis with local peritonitis, 21 days. Intestinal obstructions, 13.6 days. Perforated gastric or duodenal ulcers remained 10 to 14 days. Strangulated herniæ averaged 13.4 days. Gunshot and stab wound cases averaged 17 days, but three cases in this group lengthened the average stay from 12.8 to 17 days.

V. MORTALITY DURING ANESTHESIA

Five deaths occurred during anesthesia. All of these cases were extreme risks, the operation being justified because the patients' only possible chance of life depended upon this form of treatment. Three were cases of uncontrollable intra-abdominal hemorrhage, one advanced intestinal obstruction and one terminal case of perforated duodenal ulcer, the diagnosis of which was obscure. The mortality in this series was distributed as shown in Table VI.

TABLE VI

	Died during Anesthesia	Span of Anesthesia before Death Minutes
Perforated ulcer	1	10
Intestinal obst.....	1	27
Gunshot with severe hemorrhage	2	30, 25
Rupt. Iliac Aneurysm, severe hemorrhage	1	40

These are described:

Case G. No. 18832. White, male, aged thirty-nine years, was admitted to the psychiatric ward with provisional diagnosis of delirium tremens and an abdominal complaint. A satisfactory history was unobtainable from the patient, who had no available friends. Surgical consultation was called and a diagnosis was made of an acute surgical condition of the upper abdomen.

While administering the spinal anesthesia, beginning dependent cyanosis was observed. At operation, a perforated duodenal ulcer about 2 cm. in diameter and an advanced generalized plastic peritonitis were found. Ten minutes after administration of the anesthetic and five minutes after the onset of the operation the patient expired.

Case H. No. 8208. Black, male, aged thirty-nine years, was admitted with a history of having had an operation seven years previously for a "ruptured appendix"; for the last three years he had a number of short colicky attacks of pain which became progressively worse until five days previous to admission the present attack began. The pain was intermittent but continuous; he vomited just before admission but no fecal odor was noticed; he had had only one bowel movement in five days. Examination revealed a toxic patient, restricted abdominal movement, no visible peristalsis, slight rigidity and pain on deep palpation; pulse, rapid and thready; the blood pressure was 126/60 mm. Hg. At the operation the terminal ileum was obstructed in two areas; one area was involved in mat-like adhesions for a distance of three inches, in another area nearby a single band was found obstructing the bowel. Both obstructions were rapidly freed without attempting to peritonize. Breathing suddenly ceased; intravenous, intracardiac injections of adrenalin and cardiac massage through the diaphragm were of no avail. He expired approximately seventeen minutes after onset of operation and twenty-seven minutes after anesthesia began.

Case H. No. 2031. Colored, female, aged thirty-nine years, was admitted with multiple gunshot wounds of both lungs, left arm, and abdomen; routine treatment was given. At the operating room her blood pressure was 104/70 and pulse 70 per minute. A seven inch Moynihan's incision was made; the coelom was actually filled with blood, three transecting wounds of jejunum, two perforations of transverse colon and a large macerating wound of right lobe of the liver extending downward to the coeliac axis were found. Breathing stopped upon opening the peritoneum; all forms of resuscitation were unavailing.

Case G. No. 16873. Colored, male, aged twenty years, suffered multiple gunshot wounds of left shoulder, right buttock and abdomen. After routine treatment the blood pressure was 128/70 mm. Hg., pulse 88 per minute. Spinal anesthesia using

spinocaine. Abdomen approached by 6 inch Moynihan's incision; the cavity was filled with blood, the liver suffered a 2½ inch gouging laceration of the left lobe, 1 perforation of the anterior wall of stomach the size of a fifty cent piece, two transections of the jejunum and two perforations of the descending colon. At the middle of the operation he began to "go bad." He expired fifteen minutes after onset of operation and 25 minutes after the anesthesia began.

Case G. No. 19341. White, male, sixty years old, was admitted forty-eight hours after onset of severe piercing pain in umbilical region, followed by syncope and constant vomiting and progressive weakness. Examination revealed paleness of mucous membranes, pulse 60 per minute, temperature 98° F., slight abdominal rigidity and an indistinct tumor mass involving the right umbilical area. Diagnosis of intestinal obstruction was made. At the operation the tumor proved to be a retroperitoneal hematoma containing about 2 quarts of blood. At this point of exploration the patient died. Autopsy revealed multiple aneurysms of abdominal aorta and both common iliac arteries.

RECOGNIZABLE STAGES DURING EXITUS

During the exitus of these cases definite stages were usually distinguishable and appeared in the same order. The initial symptoms were reported by the anesthetist, blood pressure and pulse rate were absent from the arm and temporal artery; coincidentally the operative field became bloodless and the patient's color pale rather than cyanotic. Auscultation at the cardiac apex revealed a slow rate and faint sounds. Up to this point the condition could be described as a fainting spell. Shortly, the patient became restless, and some complained of a smothering sensation that pure oxygen did not relieve. Unconsciousness and gradual dilatation of the pupils followed. Administration of adrenalin, intravenously or intracardially, increased the heart rate and force sufficiently to record it at the wrist either at normal or somewhat higher. This effect was of short duration and subsequent administrations produced less and less of a reaction until no demonstrable benefit could be discovered. Continued artificial respiration with forced oxygen and carbon-dioxide administration did not appreciably influence the course of events.

When reviewing the cases it was apparent that in all probability the ultimate outcome would have been unchanged regardless of the type of anesthetic used, as several previous experiences with ether had borne out. All this strongly suggested that the margin of safety in emergency cases requiring abdominal exploration and complicated by severe uncontrolled hemorrhage, severe

shock or severe toxemia, could not be extended by spinal anesthesia.

SUMMARY

We have found in this series that spinal anesthesia was generally superior to other anesthetics of equal magnitude. We believe that it should be given wider consideration in emergency surgery below the diaphragm because operative shock, trauma and time were materially lessened and the immediate post-operative progress was more rapid.

Acute visceral perforation and intra-abdominal inflammation were not contra-indications to spinal anesthesia. The hypermobile gut became amobile when these conditions were present and the "quiet abdomen" allowed one to approach the lesion without spreading gross contamination.

Six of our cases suffered lesions of the lower extremities requiring operation in the presence of severe shock or toxicity, but with the anesthetic limited to the level of the symphysis pubis, no change in the general condition was noted.

Spinal anesthesia does not apparently increase the safety factor in advanced cases requiring abdominal surgery. As much consideration of the fitness of the anesthetic in any given case is as important with spinal anesthesia as with any other anesthesia.

Intensive preoperative treatment which produces a recovery of the patients' general condition to within normal limits (blood pressure, pulse, temperature, general reaction), may not offer enough reserve to an exceedingly unstable vasomotor system to withstand the added burden of a spinal anesthetic. Clinical consideration of the entire case history is of greater importance than the consideration of any one stage or finding.

We believe that there is a reasonable doubt that the deaths occurring during anesthesia in this series could have been prevented by the choice of another general anesthetic; it is most probable that a local anesthetic should have been employed. These cases unanimously point in the direction that the danger lies.

We believe that the deaths occurring during anesthesia were directly due to vasomotor collapse initiated by severe complications of the original lesion and completed by high anesthetization of the spinal nerves. The complications were severe shock, severe

toxicity and severe uncontrollable hemorrhage. Death was not immediate but repeated stimulations apparently fatigued the controlling mechanism before a lasting response could be obtained.

CONCLUSIONS

(1) Spinal anesthesia is highly satisfactory in emergency surgery and should be considered more frequently.

(2) Visceral perforations or intra-abdominal inflammations are not contra-indications to spinal anesthesia.

(3) Spinal anesthesia when confined to the level of symphysis pubis does not apparently influence the vasomotor system, surgically speaking.

(4) Severe shock, severe toxicity and severe uncontrollable hemorrhage are contra-indications to spinal anesthesia even if adequate treatment has brought the patient's condition within range of normal before operation.

(5) Deaths during anesthesia considered here are attributable to vasomotor collapse.

RURAL OBSTETRICS—ANALYSIS OF 500 CASES*

CHARLES F. DuBOIS, M.D.†

ALMA, MICHIGAN

This report presents a summary of five hundred consecutive full term deliveries or those advanced to the twenty-eighth week that they may be called premature labors as typical of what one experiences in a small town and rural practice of obstetrics. It omits that multitudinous group of early abortions, either self-induced, accidental or therapeutic and several tubal pregnancies. Of the five hundred women confined, only thirty-seven were hospitalized; of this latter group, twenty-seven were admitted for social reasons (the patient could afford hospital care and wished it), and ten, because of some present or impending toxemia, or complication to delivery. Eighty-one per cent of the patients had some degree of prenatal care, varying from one to sixteen office visits; the majority came from one to four times. In the 19 per cent without attention before delivery, it must be admitted that I did not observe any increase of maternal nor fetal pathology due to the lack of early professional care. The majority of this latter group were mothers who had borne a number of children in uneventful deliveries, and were careless about attention prior to confinement, or possibly it was a desire to save the added expense of care that led to this neglect.

If full coöperation of the expectant mother was obtained early in the pregnancy, a complete history and physical examination was taken on the first visit. If all indications were normal, a monthly urinalysis was made and the blood pressure taken. During the last two months, the urine was examined twice monthly. At the beginning

of the ninth month, the patient was again examined especially with reference to the position of the fetus. The appearance of any degree of toxemia or uterine hemorrhage during the gravid period often necessitated more frequent visits than just stated.

To aid in keeping the expectant mother's coöperation it has been my habit to have her read literature bearing on the subject of maternity. The Federal Government will for the asking, mail out two bulletins entitled "Infant Care" and "Prenatal Care." Our State Department of Health has a series of monthly letters which quite fully advise the patients both before and after delivery. These I frequently write for, asking that they be mailed directly to the patient. More often, however, I mail her a small booklet, "Instructions for Expectant Mothers and the Care of Infants," printed gratis by an infant-food manufacturing company, devoid of advertising, even omitting the company's name. The physician's name and address are printed on the cover.

After delivery, the patient is requested to come to the office in one month for a final pelvic examination, at which time she is told that she may return once a month if she wishes and have her baby weighed. This

*Read before the Section of Obstetrics and Gynecology of the Michigan State Medical Society at its annual meeting in Pontiac, Michigan, September 23-24, 1931.

†Dr. DuBois was graduated from the University of North Dakota in 1913, taking his A.B. degree, and from Rush Medical College in Chicago, 1916, with the degree of M.D. He was an intern at Harper Hospital and also the Herman Kiefer Hospital, Detroit. He is a member of the staff of the Saginaw General Hospital.

weight is recorded on individual weight charts also furnished gratis by the same infant-food manufacturing company.

I believe these little evidences of interest manifested towards the mother and her baby are worth while, and certainly entail no time nor cost.

Of the 500 women delivered, 355 were multiparæ and 145 primiparæ. Four hundred eighty were delivered normally. Operative delivery was resorted to with twenty patients, a frequency of 4 per cent. Six low forceps, five mid-forceps, one high forceps, seven podalic version and extractions and one cesarean section comprised the operative group. The indication for forceps was made very strict, possibly too much so. The low forceps operations were performed on five primiparæ and one multipara, for the following indications: (a) contracted pelvis with hydramnios, 1; (b) nephritis of pregnancy with prolonged labor, 1; (c) myocardial disease complicated by a nephritis of pregnancy, 2. One of these patients died with acute cardiac failure on the twenty-third day during the exertion of getting out of bed and walking to the toilet; (d) to terminate the effort of labor in a secundipara whose first delivery had been by cesarean section; (e) uterine inertia in a long labor, 1. There was one maternal, but no fetal deaths in this group.

Mid-forceps operation was performed on four primiparæ and one multipara with one maternal death and two stillbirths. One primipara with myocardial disease and broken compensation, was short, stocky, and adipose, with a small pelvic outlet. The labor was difficult; stillbirth with maternal death on the third day resulted. Three of the labors were prolonged because of large babies. One mother, a multipara of small stature, delivered a twelve and one-quarter pound stillborn baby. Another baby had about twenty-five clonic convulsions, the day after delivery, involving all of the extremities. A huge right dorso-temporal hematoma was liberated by incising the scalp, and the next day ten convulsions occurred; then gradually decreasing number with recovery. The child is still normal, seven years after birth. Mid-forceps operation was also used to terminate an eclamptic delivery. The mother and child survived.

High forceps was used once in a primipara, supposedly two weeks overdue. The patient was of small stature, but with nor-

mal pelvic dimensions. Several times she was apparently in labor, with "labor pains" ceasing on each occasion. Prolonged labor with intense uterine contraction, lack of engagement of the fetal head and maternal exhaustion indicated operative interference. The mother and child survived. The baby was nine pounds in weight and normal.

Podalic version and extraction were performed several times for the following indications: (a) eclampsia, 2; (b) transverse position, 3; (c) partial placenta prævia, 1; (d) prolapsed cord and right hand presenting, 1. In this series, there was one maternal death due to eclampsia, and four stillbirths, in three of which the fetus had been dead for one to four days. In the case of the patient with the prolapsed cord, the membranes had ruptured and the cord prolapsed two hours before I saw her.

Cesarean section was performed once for a central placenta prævia; the mother and child lived.

Cephalic presentation occurred 481 times; of which 271 were in L.O.A. position, 176 R. O. A., seven occiput posterior and twenty-seven were undetermined. There were in single pregnancies, twins excluded, fourteen breech presentations, of which twelve were frank and two were footling. There was also one hand and one face presentation. Three babies were in the transverse position. Of the twelve frank breech cases, one patient had a cephalic version during labor and was delivered normally from a left occipital anterior position. Of the remaining eleven, seven babies were delivered normally and lived, three were stillborn and one died in 48 hours with convulsions, probably due to a brain injury at birth. Concerning the three stillborn, two were in small primiparæ in whom a tight birth canal obstructed rapid delivery; the third was partially delivered with the head still in the vagina twenty minutes before my arrival.

There were only two foot-presentation deliveries; one was normal, with a live baby, while the other was stillborn, again due to a partial delivery of the fetus with the head held within the vagina before receiving aid. The one pregnancy with a hand presentation ended in a stillbirth, due to a prolapsed cord for two hours before the patient realized the possible seriousness of the complication and called for aid. The only face presentation was that of a congenital syphilitic monster. The birth was unusually easy

in spite of the presentation, as it was the fourth pregnancy of the mother. Preceding delivery, the membranes ruptured spontaneously 297 times and were artificially ruptured 203 times.

Perineal lacerations occurred in 125 patients, or twenty-five per cent of the deliveries. Forty-six of the tears occurred on the site of old scars, and 79 were primary. Practically all of the third degree tears were in primiparae, though several were in multiparae who had been previously lacerated.

During the accumulation of the first several hundred of this series, a review of tabulated data showed me that I was using pituitrin too freely, and that perineal lacerations occurred two and one-third times as often in patients who received pituitrin than in those who did not. In the last 300 deliveries its use has been much restricted.

Spontaneous delivery of the placenta occurred 489 times, manual delivery six times, and by the Crede method five times. Placental extrusion followed the method of Schultz 374 times, 75 per cent; of Duncan 112 times, 22 per cent; and undetermined fourteen times, 3 per cent. These figures followed closely the normal average which places the Schultz mechanism at 82.5 per cent.

Manual delivery of the placenta, performed six times, was necessary for the following conditions: adherent placenta, three; fragmentary delivery of placenta, two (one of these latter was extremely friable, the first portion coming away immediately following the second stage of labor); partial placenta praevia, 1.

Expulsion of the placenta by the Crede method, performed five times, was indicated

PERINEAL LACERATION

	Patients	No Laceration	Laceration	1st	Degree of tear 2nd	3rd	Per cent
Pituitrin used	173	120	53	21	28	4	31%
Pituitrin not used.....	327	255	72	23	43	6	22%
Total	500	375	125	44	71	10	25%

Episiotomy was resorted to approximately twenty-two times; practically all were unilateral. Placenta praevia occurred four times; three marginal and one central. In all but one of these pathological conditions, the pregnancies were delivered at term. Marginal: (a) primipara, flowed for three weeks moderately during the ninth month, and delivered normally at term; (b) multipara, seven para, was delivered by version and extraction at eight and one-half months. She had flowed moderately for three days, then had a profuse hemorrhage the day of delivery; (c) multipara, six para, delivered at full term, normally. She had one slight hemorrhage in seventh month. This occurred twice in the eighth month. At term she had a moderate hemorrhage the day before delivery, which became profuse the following morning; the cervix was then packed and the patient delivered normally in the afternoon. The central placenta praevia was in a multipara, six para. She was delivered at full term by cesarean section, immediately following a single profound hemorrhage. The mother and baby survived all four of these deliveries.

in: eclampsia, two; adherent placenta, two; and once for a partial placenta praevia which was bleeding.

Post-partum hemorrhage occurred thirty-one times, of which twenty-three were moderate, and eight severe. All responded to ergot, pituitrin, abdominal massage of the uterus, and, in one instance, suturing, except one of the severe hemorrhage group which required a uterine pack. The etiology of the eight severe hemorrhages were: atony of uterus, five. One of these was in a case of hydramnios, while in another the hemorrhage did not occur until three hours post-partum; partial placenta praevia, one; deep tear of the birth canal, one; and one in which I could not ascribe a definite cause. This patient, a tertipara, had always had profuse menses, and a severe post-delivery hemorrhage occurred with her first baby. Seven years ago she had a pelvic operation after a gonorrheal infection. She was confined to bed three or four weeks with a fever 99.5 to 101 degrees, and a mass in the left fornix. Gradual recovery followed. There were no deaths in this group.

There was a considerable group of toxemias encountered, including patients with

cardiac disease, aside from the toxemias of pregnancy.

Two patients had an active hyperthyroidism with an accelerated B.M.R. throughout their pregnancy. Both of these patients developed their toxic symptoms after the onset of pregnancy, having been normal previous to their gravid state. Lugol's solution was given at intervals as the condition warranted. They delivered normally and had a comfortable puerperium with gradual regression of the thyrotoxicosis.

Two patients developed influenza: (a) tertipara at eight months was ill one week preceding delivery. During the 24 hour period preceding labor she had repeated profuse rectal hemorrhages with a resulting hemoglobin of 25 per cent. During the puerperium, she had a lobar pneumonia, with ultimate recovery; (b) secundipara at seven and one-half months, had influenza for one week; the day before delivery a bilateral pneumonia developed. She delivered a stillborn fetus and died on the following day.

An active pulmonary tuberculosis, demonstrable, was noted in seven patients. There were no immediate maternal nor fetal deaths, though I believe one mother died about two years after her confinement. One of these mothers, I delivered normally as a primipara, after which she had a prolonged febrile convalescence. Contrary to advice as to future pregnancies, she was later confined twice at full term. As a secundipara, she had an adherent placenta which was removed manually in fragments. The puerperium was very severe and the patient had a high fever 100-105 degrees for ten days. The three children at present are of very frail constitution.

The history of another patient with pulmonary disease is of sufficient interest to note: her physical condition was apparently normal as a young woman. Her first pregnancy aborted accidentally at one and one-half months, after which she was curetted. Following this, she began to fail and a diagnosis of tuberculosis of the left upper lobe was made. Within a year after the abortion she again became pregnant and went to full term, with normal delivery of a ten pound baby. The baby died at four months with the following autopsy report:

"Sub-acute diphtheritic enteritis (Dysentery). Localized peritonitis. Sub-acute catarrhal gastritis. Sub-acute broncho-pneumonia. Atelectasis, chronic passive congestion and edema of lungs. Localized

pleuritis. Hydrothorax. Bilateral otitis media. Marked inanition. Marasmus. Congestion, edema, atrophy and parenchymatous degeneration of all organs. Excessive hemolysis. Pseudomelanosis of peritoneum. Rachitis. Meckel's diverticulum."

Five months after her confinement, she had an appendectomy, round ligament shortening and repair of a third degree perineal and cervical laceration. Two years later she was hospitalized with an acute pelvic inflammation and generalized arthritis. The following year she came to me with a well advanced pregnancy and an active lesion in the right lung. Following a normal delivery she was placed in a sanatorium for one year. Somewhat improved, she returned home, became pregnant, insisted on carrying the pregnancy and was again confined normally at term. At present, two and one-half years after her last labor, she is carrying on a losing fight against her pulmonary infection.

One patient became ill with measles the week preceding a full-term delivery, and the baby contracted the disease during the puerperium. The convalescence of both was uneventful.

Acute cholecystitis occurred in one patient two weeks prior to delivery. This added no undue complication, but retarded her convalescence as she flowed more than normal for a month.

One patient with secondary anemia whose hemoglobin varied from 30 to 40 per cent went to full term, treated symptomatically. An uneventful recovery followed, after delivery. A primipara with a hemoglobin of 65 per cent during the entire gravid period flowed freely after delivery with a resulting hemoglobin of 25 per cent. Full recovery followed.

Two primiparae with severe multiple arthritis were delivered at term normally. The more severe of the two was an invalid restricted to bed and chair, with partial ankylosis of all the large joints. The knees were completely ankylosed in 90 degrees flexion and the hip joints partially restricted in motion.

Eight cases of maternal gonorrhea and four of syphilis were under treatment at the time of delivery, or had been within a year previous to confinement. One of the syphilitic patients, a multipara totally blind, who gave a history of repeated miscarriages, delivered a monster at seven months. There were no cases of gonorrheal ophthalmia neonatorum. One patient, a multipara

with gonorrhea, died on the 15th postpartum day with a general peritonitis and pericarditis. Another patient, a primipara, was treated for an acute gonorrhea up to the time of delivery. During labor, no vaginal examinations were made. In this case, possibly fortunately, the membranes did not rupture until the head was born. On the fourth day of the puerperium, she developed a fever, lasting four days, temperature 99 to 102.2 degrees. The lochia was foul. There was moderate distress across the lower abdomen. The balance of the puerperium was normal except for a fever of 99 degrees for another four days at the end of her convalescence.

Cardiac disease comprised a large group which in several cases was complicated by pregnancy with fatal results. There were twenty-nine patients with mitral disease, either stenosis or insufficiency, and eight with myocarditis. On the whole, the patients with myocardial disease offered more of a problem in therapy during the gravid state, than did those with mitral disease, as the latter exhibited scant loss in compensation. The management of three of the myocardial group, all primiparae, was very taxing. Two of these terminated fatally, as stated previously under the discussion of "forceps deliveries," after being in varying degrees of decompensation through most of the gravid period. The other patient, whose cardiac disease dated from two previous attacks of diphtheria, developed an hydramnios which was progressive with pressure on the diaphragm, with such dyspnea and embarrassment to respiration that she had to lie almost in a sitting position. This was accompanied by nephritis, and severe edema of the lower extremities. Her weight increased from 140 pounds pre-gravid to 254 pounds preceding delivery. With an impending failure of kidney function, labor was induced at eight and one-half months, and terminated successfully with a low forceps delivery.

Maternal anomalies were rare. One primipara had a tense vaginal septum in the mid-line, extending vertically the entire length of the vaginal vault, terminating in front of the cervix. The fetus was born prematurely at seven and one-half months, through the left portion of the vagina, without rupturing the septum; the baby lived.

Another primipara with arthritis deformans was described above. A secundip-

ara, though not strictly in the group of maternal anomalies, is worthy of mention. Her first pregnancy was normal throughout, but at term she was delivered of a seven pound normal baby by cesarean section. She came to me during her second pregnancy, and though she had normal pelvic measurements, the dictum "Once a cesarean, always a cesarean" confronted me. She was referred to Dr. Reuben Peterson, who advised giving her a test of labor. At term she was hospitalized and an uneventful labor terminated with low forceps. Another multipara, four para, had a most marked prolapse of the bladder and rectum, which were pushed down by the advancing fetal head.

Multiple infarction of the placenta was observed once, in a premature delivery with a living baby.

Pelvic deformities, as observed, constituted a small group. I have not at all made pelvic mensuration routine, but have limited it to a few primiparae who were of small stature, a few who on examination appeared to have an abnormal pelvis and some who gave a history of previous difficult labor; 37 in all had pelvimetry. Possibly too much reliance has been placed on the statement of Williams, that "generally speaking, large well built women are likely to have normal, and undersized women contracted pelves." A small pelvic outlet was the most common deformity noted, though a contracted pelvis was seen once and the "relative assimilation" type of Epstein, with unusual prominence of the sacrum internally, was seen several times. A bony exostosis in the right posterior oblique prevented engagement in the one patient who had a high forceps delivery.

Appendectomy was performed five times during the gravid period with no maternal deaths: (a) primipara, appendectomy in second month, delivered prematurely at seven and one-half months; baby lived; (b) secundipara, appendectomy in the third month; full term normal delivery; baby lived; (c) tertipara, appendectomy at five and one-half months, baby born prematurely and died; (d) tertipara, appendectomy at the fourth month. In the eighth month of pregnancy the patient developed whooping cough. During the third week of this illness she delivered twins prematurely, and both babies died within forty-eight hours; (e) multipara, appendectomy in the fourth

month. Normal full term delivery; baby lived.

Toxemia of pregnancy with its variety of symptoms and degrees of severity offered the really big problem in the management of nineteen pregnancies. Ten were of the nephritic type, with albumin, casts, hypertension and edema; six of these were carried as close to term as possible, and then labor was induced prematurely to prevent any catastrophe. The most profound case of toxemia of the nephritic group was in a patient delivered in consultation, a secundipara with normal delivery at term. For five weeks preceding labor she had an extensive edema of her legs and abdomen. When she was seen at the time of delivery, the edema was most profound. The urinary albumin was almost solid on testing. She had an albuminuric retinitis, with blindness for one and one-half weeks. There was a coarse mitral systolic murmur heard distinctly in the axillary area, and the left cardiac border was well out. The blood pressure was 164/130. The puerperium was uneventful, with return of the patient to normal. There were no deaths in this nephritic group.

Three cases of eclampsia were encountered: (a) primipara with a normal gravid period; the last urinalysis, one week preceding delivery, was normal. She had five convulsions during the hour preceding a mid-forceps delivery. Normal puerperium. Mother and baby lived; (b) multipara first seen in labor with repeated convulsions. Following a version and extraction, the convulsions ceased. The puerperium was normal; mother and baby lived; (c) primipara of very small stature; weight 88 pounds. Pelvic measurements were just within normal proportions, though she had a rather acute pubic arch. She was extremely well throughout her pregnancy, with normal urine and blood pressure. However, she had a tachycardia, most of the time, the cause of which I could not determine. During the week preceding her date of confinement she had a diarrhea for two days from a dietary indiscretion. Following this, on office consultation, she was in good condition, urine and blood pressure normal and the fetus viable. Three days later on being called to her home, all the symptoms of a pre-eclamptic were in evidence: blood pressure 184/110. There was a heavy trace of urinary albumin. The fetus was apparently dead. The

patient had an acute edema of feet and ankles for the previous eighteen hours and an intense headache for twelve hours. She was hospitalized and every attempt made to induce labor, but unsuccessful. Three convulsions were promptly controlled by 20 c.c. of 10 per cent magnesium sulphate intravenously, on each occurrence. A difficult version and extraction, and cranioclasia delivered the dead fetus. Maternal death occurred five minutes later.

Two patients were rather toxic at the time of premature twin stillbirths; in both cases the twins had probably been dead about one week. Convalescence of each was normal.

There were six patients with hydramnios, two of whom were included in the nephritic group mentioned above. Hydramnios caused several of the patients moderate respiratory embarrassment and edema of the legs. In one instance a premature stillbirth occurred, and in two, the babies were greatly under the average normal weight.

PUERPERIUM

In the 500 deliveries, there were 473 with a normal and uneventful convalescence and twenty-seven in whom it was abnormal or prolonged. These figures are only approximate, and the exact maternal morbidity undoubtedly underestimated. With the huge majority delivered outside of a hospital, and usually only one post-partum visit made, it is reasonable to assume that some mothers had a post-delivery fever which escaped notice.

Of the twenty-seven patients, nineteen have been included in the toxic or hemorrhagic groups above. Eight had a normal gravid period but an abnormal puerperium as follows: one breast abscess and salpingitis (this patient had a breast abscess with her first baby); one breast abscess and hemorrhoids requiring surgical care; one acute mastitis, one secondary anemia; one prolonged urinary retention; one lobar pneumonia; and two with fever of undetermined origin.

MATERNAL MORTALITY

There were five maternal deaths in this group; two multiparæ and three primiparæ. The multiparous causes were: (a) influenza-pneumonia; (b) peritonitis and pericarditis in a patient with gonorrhea. The

primiparæ died with the following: (a) eclampsia, one; (b) heart disease, two.

INFANT STATISTICS

The fetal aspect of this report is of interest. There were 515 babies born, including fifteen pairs of twins. The male babies averaged 7.45 pounds, and the females 7.1 pounds. Two pairs of twins were stillborn and two pairs, born prematurely, died. Only two mothers in the group had delivered twins previously.

An account of one twin delivery, exemplifies the trouble one may unexpectedly encounter when working alone, without proper aid: patient, six para; first twin, in L.O.A. position, was born spontaneously. Just at delivery an abnormally short cord broke at the umbilicus, and retracted. While attempting to clamp the fetal end and search for the bleeding maternal end, the left foot of the second twin presented and its cord prolapsed. Intra-uterine death occurred before the fetus could be delivered; this twin was otherwise normal. The first twin had a huge symmetrical goiter, with extreme cyanosis of the face; the scrotum was well developed but the penis was absent, and the right testicle undescended; there was no rectal orifice. Death ensued in 48 hours. The single placenta weighed 3.5 pounds. In connection with the congenital goiter, it is of interest to note that both parents had large adenomatous goiters; especially the mother whose goiter was quite deforming because of its size. The fourth baby born to this mother had a bilaterally symmetrical, hypertrophied thyroid, the lobes being

the size of the baby's fist. There was cyanosis of the face and head in this case also. The cyanosis cleared in two weeks and the thyroid had resumed normal size in seven weeks.

Fetal abnormalities occurred eighty-three times. This classification is rather broad as it includes premature and stillbirths as well as congenital defects and monsters. Many times several conditions existed simultaneously in the same baby. They are as follows: thirty-two premature births, of whom thirteen lived and nineteen died within forty-eight hours; twenty-three stillbirths; four monsters; two club foot; five spina bifida and hydrocephalus; five cephalhematomas; six congenital goiters; and one each of the following: absence of first carpal joint of fifth left finger; penis absent; imperforate anus; penis adherent to scrotum; profuse gastric hemorrhage on the fifth day, baby survived; slight facial paralysis after instrumental delivery, with gradual recovery to normal.

Several times the cord was of sufficient interest to make a note of it; on one occasion the cord thrice around the neck occurred in a stillborn baby. Twice a loosely tied single knot was observed.

What a report on the management of 500 labors proves, is questionable. It does demonstrate the fact that one may keep accurate records and be guided by a perusal of them as to good or bad results in certain lines of activity or therapy, even though he is far from a medical center or well-staffed hospital. My early experience with pituitrin and recorded results showed me the value of well-kept records.

INCIDENCE OF SYPHILIS IN PRIVATE PRACTICE

Edgar F. Kiser and C. B. Bohner, Indianapolis, analyze their observations in 2,872 consecutive examinations made from Sept. 1, 1925, to Jan. 1, 1932, on private patients who came to their offices for physical examinations. They were of the well-to-do and middle class in about equal proportions. All were white. There were 1,084 men and 1,788 women. The individual occupations are not recorded, but a cross-section of the group would represent in occupation, wealth and social position an average practice recruited from the so-called upper social strata. None came primarily because of known syphilis; in fact, none had primary lesions at the time of our examination and only two had secondary manifestations.

Blood Wassermann and Kahn tests were made as a routine on each patient in the series. The work was done in a commercial laboratory, all tests were made by a single technician, a man regarded by the physicians of the community as being entirely dependable. In every instance the complement fixation was done by the Kolmer method, as well as with cholesterolized and alcoholic antigens. No reaction was reported as four plus unless the blood reacted so with all three antigens and showed a four plus Kahn reaction as well. Of the 2,872 patients 105, or 3.65 per cent, responded with such a straight four plus reaction. Sixty-six of the 105 patients were males—an incidence of 6.08 per cent of the 1,084 men in the series; 39 were females—an incidence of 2.18 per cent of the 1,788 women examined.—*Journal A. M. A.*

KIDNEY INFECTIONS OF THE ADOLESCENT FEMALE

ROBERT L. COWEN, M.D.†

DETROIT, MICHIGAN

Female adolescence is the period extending from the time when changes of puberty begin to manifest themselves to the time when the function of menstruation has been regularly established, the secondary sex characteristics fully developed, and the girl has practically reached her full physical stature, although the bony pelvis does not attain full size until the twenty-second or twenty-third year, the age of nubility. Early adolescence is a critical period in which unhygienic methods of living may easily produce disastrous results affecting both body and mind. There is marked alteration in the entire body biochemistry, especially in the blood and lymph balance. This marked change is mostly centered in the female pelvis at an important point of elimination by the kidneys.

Bacterial renal infections termed "pyelitis" occurring in boys at this age is, in my experience, practically unheard of, whereas in girls it is extremely common, with recurrent fever, chills, backache, and urinary symptoms often of unexplained cause. The pyelitis of infancy is estimated to occur in girls in a ratio of about ten to one; the pyelitis of adolescence is confined exclusively to girls on account of the definite pelvic changes which are seen if they come to general examination and cystoscopy.

The condition is much more common than is generally recognized, for several reasons, one no inconsiderable one being the reticence on the part of the pubescent girl to complain of burning or frequency of urination. School children may be quite stoical in enduring dysuria above all other less intimate symptoms rather than voice complaint.

Infections of the kidney in pre-adolescents are probably due directly to the specific changes noted in the bladder and pelvic ureter at this period. While the determination of previously existing renal infection is difficult because of the frequently indifferent history and treatment of previous pyelitis of infancy, as well as a recurring cystitis from chronic urethral gland infections, in early puberty a flare-up of latent conditions in the renal pelvis is decidedly frequent.

The clinical entity of pyelitis of adolescence shows a routine clinical picture. Similar to the true pyelitis of pregnancy and the exacerbation of renal infections pre-existing

to the pregnant state which is a specific condition most frequent in multiparæ, most often on the right side, worst at the twentieth week and tending to resolve thereafter—so the clinical entity of pyelitis in pre-adolescents shows a routine clinical picture and regular organic findings. The etiology is bacterial invasion plus defective drainage from the ureters, and distant as well as proximal foci of infection such as may be ascribed to the direct lymphatic communication between the colon and the right kidney, and it is due to the organic pelvic changes occurring at this age. Spontaneous pyelitis with no stone, hydronephrosis with no stasis, in contradistinction to the secondary infections with these conditions predisposing, occur in female infants frequently. In adolescent girls, just as in pregnant women, there are definite predisposing influences which can be visualized on examination.

The changes which I have noted through the cystoscope uniformly in early adolescence (in the quiescent periods and not with acute inflammation present) are: elevation and congestion of the trigonal mucosa; trabeculation of the floor of the bladder; elevation of the inter-ureteric ridge with more prominently appearing ureteral orifices; suggestion of dilatation of both ureters on passage of ureteral catheters; and diminished peristalsis and emptying seen on ureterographic pictures. This is probably due to extra-ureteral vascular engorgement. The constant finding of pyuria yielding colon bacilli, because of its overgrowth of other organisms, and the usual presence in the stained sediment has been regularly found in my cases. The pyelitis is always bilateral due to the hyperplastic changes in both ureters without the twisting dextra-rotary factor occurring in the bladder in pregnancy.

†Dr. Robert L. Cowen graduated from Detroit College of Medicine, 1917. He was intern at Grace Hospital, Detroit; in the U. S. Army, Urological Service in A. E. F., 1918-1919. He has been urologist to Evangelical Deaconess Hospital since 1924.

The endocrinal changes responsible for the uretero-vesical alterations during early pubescence should have relevance to the ovarian metaplasia causing the vascular engorgement in the uterine and ovarian arteries, their branches to the lower end of the ureters, profound lymphatic alteration in the pelvic channels and glands. Pituitary change and its recently proven specific activating influence on the ovaries, but more especially its specific effect on the ureteral musculature and its peristalsis is a factor.

The occluding kinking power of structures crossing over the lower end of the ureter is increased manifold at the pre-adolescent stage. Extension of adnexal disease, which may perhaps include colonic stasis, with bacillus coli migration with or without thrombophlebitis, may be an infective factor. Infection through the lymphatics of the ureter, which continue from the bladder up to the renal pelvis, is a possible source for the ascension of bacteria as well as lymphatic involvement from the rectal glands and stagnation and absorption from the bowel.

The commonest source of infection is probably direct ascension along the lumen of the ureters from the infected bladder which may have been directly contaminated from the female urethra. The occurrence of pyelitis in infancy, being a disease of females, gives support to the probability of the infection coming in from the female urethra and chronic infection in the urethral glands. Vesico-renal reflux should only occur with either vesical neck obstruction or with considerable stagnation in the bladder. It has been claimed that *Bacillus coli* findings are positive in a great many normal bladders and in pregnancy with its residual urine in 60 to 80 per cent of all cases.

The usual symptoms are pallor, restlessness, pyuria, dysuria, incontinence, malaise, and chills with fever. Fever of undetermined origin should be the chief symptom making imperative an examination of the urine for pus. Any one of these symptoms alone requires consideration of kidney infection.

Diet and hygiene are essentials in the treatment, which comprises a very careful hygiene for the adolescent girl. Although there is no theoretical reason for the limitation of proteins, renal infections seem to do better with fruit and vegetable diets. Rest

and moderation of exertion in play, which girls at this age are apt to overdo, as well as insistence on regular emptying of the bladder when at school, must be emphasized.

In the removal of foci of infection such as may be present in the tonsils, middle ear, etc., chronic infection causing leukorrhea in little girls is common and requires investigation. The incidence of vaginal gonorrhea in young girls is so much greater than is generally recognized that it is more than a matter of conjecture how many of the so-called simple leukorrheas in virgins may be due to a secondary infection after a gonorrheal vaginitis of childhood. This can be cleared up by careful persistent vaginal instillations of various antiseptics, by the mother, daily for several months.

Prevention of colonic stasis as possible source of the colon bacilli is achieved by the diet, free water intake, and general measures to overcome colonic stagnation.

Medicinally the use of methenamine with acidification of the urine with ammonium chloride or sodium acid phosphate is of benefit, changing to alkalinization with sodium citrates and bicarbonates. None of the newer expensive antiseptics is any better or as good as methenamine. Intravenous methenamine puts a greater concentration of formaldehyde in the bladder than that taken by mouth.

Pituitrin injections hypodermically seem to have a beneficial effect on the musculature of the ureters as well as a definite effect in the relief of pain. It has perhaps an endocrinal effect on pelvic organs, resulting in improvement. Hospitalized cases where this has been used apparently responded well in several cases.

Drainage is a requisite for recovery. Bladder drainage is kept up best by not allowing overdistention, and by instillations of argyrol or other mild solutions per catheter after emptying the bladder. Ureteral drainage by the Fowler position is maintained in the acute cases, and determining the patency of the ureter with drainage by the ureteral catheter is indicated in the recurrent cases. Drainage of the renal pelvis must be accomplished in recurring cases by cystoscopy and catheterization of the ureters, or if the acute case is of over two or three weeks' duration. Lavage of the renal pelvis is not as important as is the ureteral dilatation and drainage.

SUMMARY

1. Pyelitis in early adolescence in females is a definite clinical entity very similar to pyelitis in pregnancy.

2. Because of lack of its diagnosis, no statistics are available as to the frequency of occurrence of pyelitis of the pre-adolescent. All other types of renal disease with organic change must be excluded.

3. Pyelitis of puberty occurs often with no discoverable focus of infection and must be attributed to ascending infection as that occurring in the pyelitis of infancy, which is a disease of the female.

4. Treatment is effective and spontaneous subsidence occurs, but recurrences at regular periods are frequent, often concomitant with pre-menstrual congestion.

5. Typical pathological findings which are definitely constant have been described.

REFERENCES

1. Folsom, A. I.: The female urethra. *J. A. M. A.*, Nov., 1931, 1351.
2. Hoffbauer, J. C.: Studies in etiology and treatment of pyelitis of pregnancy. *N. E. Med. Jour.*, 1928, 198:427.
3. Beer and Hyman: *Diseases Urinary Tract in Child*. Hoeber, 1930.
4. Hazelhorst, G.: *Ber. uber Gynakol. u Geburtshilf, sowie deren Grenzgeb.*, 1930, 18:369.
5. Johnstone, R. W.: *Brit. Med. Jour.*, 1927, 11:442.
6. Hunner, G. L.: Ureteral Stricture and Chronic Pyelitis in Children. *Amer. Jour. Dis. Child.*, 1927, 30:603.
7. Franke: *Centralb. f. Grenz. d. Med. u. Ch.*, 1911, 20:11-623.
8. Schreiber, M.: Ureteral stricture, its anatomical and pathologic background. *S. G. U.*, 1927, 45:423.
9. Draper, et al.: Effect of pituitary extract in pyelitis. *Jour. Urol.*, 1931, 26:1.
10. Helmholtz, H. F.: Therapeutic value of hexylresorcinol in chronic pyelitis of children. *Amer. Jour. Dis. Child.*, 1926, 31.
11. Helmholtz, H. F.: Renal infections in childhood. *Wis. Med. Jour.*, 1927, 20:6.

ASPHYXIA NEONATORUM*

HAROLD HENDERSON, M.D.
DETROIT, MICHIGAN

The frequency of acute asphyxia in the newborn is the excuse for presenting a paper upon this subject. In the Second Woman's Clinic in Budapest a survey of 16,000 deliveries revealed that 800 babies were born asphyxiated; one-fourth of these did not respond to treatment. The subject falls naturally into the divisions of etiology, physiology, pathology, diagnosis, and treatment. In the interest of simplicity and also because it is foreign to our subject we will disregard those cases of asphyxia resulting from causes operating during pregnancy. Acute asphyxia of the newborn in the vast majority of cases is due to (1) brain injury, (2) interference with placental circulation, (3) mechanical obstruction to breathing, or (4) drugs.

Brain injury is the result of (a) crushing forceps injuries, (b) excessive pressure on the after-coming head in breech deliveries, or (c) prolonged perineal resistance in the second stage of labor.

The placental circulation is interfered with in (a) abruptio placentæ, either partial or complete, (b) placenta previa, (c) prolapse of the cord, both frank and occult, (d) excessive or tonic labor pains incident to the use of pituitrin or thymophysin, (e) rupture of the placental vessels in velamentous insertion of the cord, (f) coils of cord around the neck or extremities, (g) true knots and other less common conditions.

Mechanical obstruction to breathing re-

sults usually from the aspiration of meconium, plugs of mucus or liquor amnii. Congenital anomalies of the respiratory passages are so rare that we may disregard them in a practical discussion of the condition.

Finally we must consider the respiratory center which has been depressed by the administration of anesthesia or sedatives to the mother in an effort to lessen her suffering.

The conduct of the obstetrical case, especially in the hands of the specialist, has been changing from one of prolonged expectant inactivity to one of hasty and often inconsiderate interference. The merits, or demerits, of this change is beyond the scope of this paper. No one will deny, however, that the application of forceps, except in those cases where delivery is delayed, will occasionally cause enough cerebral compression to produce intracranial hemorrhage. In

*Read before the Section of Obstetrics and Gynecology of the Michigan State Medical Society at its annual meeting in Pontiac, Michigan, September 23-24, 1931.

the hands of the expert these catastrophes are, no doubt, rare, but the surgical tendency which we have just mentioned has spread rapidly until now those who are less skilled are making free use of instruments.

The increasing demand on the part of women that childbirth be painless or nearly so has enormously increased the number of babies that are born heavily narcotized. The placenta readily passes on to the child any medicine administered to the mother. If the drug is given sufficiently early in the first stage, it is usually partly eliminated by the time delivery occurs and so is relatively harmless. But since we have difficulty in estimating the probable length of labor, it is not uncommon for the child to be born while the sedative is still at work. The importance of this factor cannot be over-emphasized.

Morphine has long been recognized as a respiratory depressant, and we try carefully to avoid its exhibition within two hours of the expected time of delivery. Scopolamine is linked with morphine in twilight sleep, and these two drugs have been widely condemned as the cause of an occasional fetal death where there was no other apparent cause. All of us are familiar with the limp, sluggish infant following even the careful use of these two drugs. Pernocton and sodium amytal have been more recently introduced into the treatment of the first stage and here, also, we have a marked depressant action.

There is another factor that is undoubtedly very important, and yet it receives but scant recognition, and that is the use of nitrous oxide anesthesia. Air contains 20 per cent of oxygen, but a patient cannot be anesthetized on less than 90 to 95 per cent of nitrous oxide, so there is a condition of anoxemia in the mother and likewise in the child. If this is continued over a period of time, it will unquestionably affect the fetal respiratory center. When using this type of anesthesia, the obstetrician should insist that his patient be kept pink and not slightly cyanosed, as is the habit with some anesthetists. Ethylene, because it is used with a higher oxygen concentration, is more satisfactory from this point of view, but its explosive character deters most of us from using it, especially where intermittent analgesia is required. In connection with this point let us bear in mind that ether and chloroform are used with an ample supply

of air and hence from the standpoint of fetal asphyxia are the anesthetics of choice.

Before dismissing the subject of etiology let us not forget that these factors often exist in combination with one another. We may have a prolonged hard labor treated liberally with sedatives followed by deep surgical anesthesia and operative delivery. In such a case to what shall we ascribe the asphyxia? No doubt, each factor is contributory and must be considered.

In speaking of diagnosis let us first say a few words about intra-uterine asphyxia. It is indicated by persistent slowing of the fetal heart below a hundred or an increase above 180. Do not forget, however, that if auscultation reveals fetal distress any operative interference, unless the head is on the perineum, will probably result in death of the child. Attempts to deliver a distressed child through an undilated cervix will hasten an inevitable fatality and possibly do irreparable injury to an otherwise healthy mother.

The passage of meconium-stained fluid is a time-honored signal of fetal embarrassment but should be checked by careful study of the heart tones. Careful consideration of the stage of labor and the condition of the mother will then determine the method of procedure.

The diagnosis of intra-uterine cord pressure and its treatment need not enter into our present discussion.

The recognition of asphyxia after delivery is evident from inspection of the child. The ordinary classification of livid and pallid asphyxia is convenient, although there are many gradations between these two extremes. While the condition is evident, the etiology often is not, and therefore the prognosis is clouded. If there are evident forceps injuries, or if a difficult version or breech extraction has been done, there is strong likelihood of brain injury, and our chances of resuscitating the child are poor. On the other hand, if twilight sleep or some of the newer sedatives have been used, we are probably dealing with a narcotized child, and the outlook is correspondingly good.

The prognosis, then, depends upon the condition of the child, a factor which we cannot always evaluate in the activity of the delivery room. Fortunately, the principles of treatment are the same and if we waste half an hour or more in working over a hopelessly injured infant, let us not forget

that lack of persistence might needlessly sacrifice another not so badly hurt.

The treatment of a condition which affects 5 per cent of the babies born is of vital importance to every one doing obstetrics. If one in twenty babies is so affected in a charity clinic, where narcotics and anesthesia are rare, and where operations are done only in case of real dystocia, it is safe to say that the percentage of asphyxiated infants among our pay cases is much higher.

In order to fully appreciate the problem before us let us briefly consider the physiology of respiration. In utero the partial pressures of carbon dioxide and oxygen are kept relatively constant by the passage of these gases through the placenta. The lungs are solid organs, and the pulmonary artery is short-circuited by the ductus arteriosus and the foramen ovale. With the first inspiratory movement of the child a negative intrathoracic pressure is created. This opens the alveoli of the lungs and creates a new field for blood distribution. The heart is pumping blood into the systemic circulation against a resistance of 120 to 140 millimeters of mercury, while the resistance in the pulmonary vessels is about one-tenth of that. The result is a rapidly increasing blood flow through the lungs and the establishment of the adult method of gas exchange.

An important point, and one not generally recognized, is the fact that the transition from fetal pneumatosis to complete expansion is a gradual one. This has long been recognized empirically, since a lusty, vigorous cry at birth is looked upon as a favorable sign. Autopsy records and X-rays of the newborn have shown us in recent years that atelectasis and consequent pneumonia are frequent factors in neonatal morbidity and mortality.

In considering the physiology of respiration it is necessary to bear in mind that oxygen itself is a food, not a stimulant. The stimulus to breathing depends upon the concentration of carbon dioxide. With increase of the carbon dioxide concentration in the blood, respiration becomes deeper and more rapid. This is the mechanism in the normal individual, whether adult or newborn. In the latter, however, we have another factor which cannot be overlooked. An infant recently subjected to severe cerebral compression combined with a variable degree of asphyxia must be looked upon as suffering

from an injury which may temporarily suspend the normal physiological stimulation of the respiratory center. For such a child a steady supply of oxygen is needed, not an increased concentration of carbon dioxide.

From the standpoint of pathology there is a vast difference between the apneic but uninjured child of a hard labor and an infant with severe cerebral hemorrhage. The immediate course of action is the same in both instances, however, and it is safe to defer a more accurate diagnosis until the immediate emergency is over.

Prevention, of course, is the keynote of all treatment, and the points to be considered here are many. First, we must shorten prolonged hard labors, especially if the protective sack of water has been broken. The judicious use of sedatives and the proper timing of interference is essential in these cases. To relieve perineal pressure on the head, wide episiotomy is frequently resorted to with gratifying results. Second, the avoidance of excessive dosage of drugs which depress the fetal respiratory center. Morphine, scopolamine, and other sedatives should be used guardedly and not at all for at least two hours before delivery. These drugs are invaluable in the first stage of labor but care must be exercised in both dosage and the time of administration. Nitrous oxide is an excellent anesthetic but it is better to saturate it liberally with ether and keep the oxygen content high enough to insure satisfactory aëration.

Deep anesthesia in difficult labor is often combined with operative interference and so several factors which produce asphyxia are combined. In these cases expert judgment and skillful application of obstetrical procedures is necessary if we expect to avoid serious fetal injury.

Despite our best efforts there will still be instances in which the infant is born in a condition of acute asphyxia, and it is the treatment of these cases which I wish to outline.

First, all such babies should be handled as if they were cases of cerebral hemorrhage. The mauling and abuse to which this class of patient has occasionally been subjected should be relegated to the museum of medical horrors. The Schultze swinging method, vigorous back slapping, hot and cold tubs, and crushing compression of the chest give unmistakable evidence of a total lack of ap-

preciation of the problem by the attendant. If the child is in good condition, it may suffer no ill effects. If it has a cerebral hemorrhage, such treatment will merely aggravate the condition. If the case is a borderline one, it will probably die as the result of manhandling.

There are three cardinal principles to be borne in mind. First, maintenance of body heat; second, clearing of the air passages; and finally, the administration of oxygen. To this might be added a fourth principle, namely, the prevention of the so-called secondary asphyxia. All of us are agreed on these points, the chief differences of opinion being in the methods of applying them.

There are several ways of keeping the child warm. The normal baby is wrapped in a blanket after the cord and eyes are cared for, and placed carefully in a crib warmed with a hot water bottle. But when the infant is asphyxiated the manipulations necessary to restore it are often carried on in the open air without even the protection of a blanket, so loss of body heat is inevitable. Care then should be exercised to keep the infant warm and expose it as little as possible to the chilling effect of room temperature. In this connection the warm bath is to be heartily recommended. This temporary disregard of aseptic technic in the care of the cord is almost invariably without ill effect.

The second principle is clearing of the air passages. As soon as the child is born it should be carefully held up by the feet while the chest and trachea are gently massaged toward the throat. This dislodges mucous and amniotic fluid, clearing the passage for the entrance of air. As a supplement to this the tracheal catheter is of great value. In the absence of one with a special bulb to catch the secretions, an ordinary rubber catheter may be used.

Finally, we come to the problem of administering oxygen, and here we find the greatest divergence of opinion. The physiologist analyzes the situation and decides that the unresponsive respiratory center must be stimulated and he concludes that the best stimulant is carbon dioxide, so he advises the administration of 95 per cent oxygen and 5 per cent carbon dioxide, a mixture which for simplicity is called carbogen. The obstetrician on the other hand sees an infant that has been badly used up by a tiring labor and he feels that the condition of depressed

respiration is due more to the trauma of delivery than to lack of carbon dioxide. In such delicate nervous tissue edema and stasis may be the entire pathological picture. Therefore, he concludes that if he can keep the center supplied with freshly oxygenated blood for a few minutes the child will recover, unless the damage is irreparable. The obstetrician, therefore, forgetting the fine points of physiology, administers oxygen.

Fortunately, the physiologist includes ample oxygen in his prescription and the obstetrician has no objection to 5 per cent carbon dioxide, so a compromise is easily effected. Without doubt, the problem at first is not one of a mixture of gases. The medulla is swamped with carbon dioxide and other waste products. The circulation is weak and sluggish. As soon as either air, oxygen, or carbogen enter the lungs the heart picks up rapidly, circulation is established, and the respiratory center begins to function. Simple inflation of the lungs is the best cardiac stimulant in the newborn. Adrenalin is valuable and may be given in ten to fifteen minim doses directly into the heart. Alpha-lobeloin is an undoubted respiratory stimulant, but it is of little value when the circulation is embarrassed.

Having determined upon the nature of the gas mixture to be used in resuscitation, we are still at loggerheads over the method of inflating the lungs. Numerous suggestions have been made and much apparatus has been invented to accomplish this purpose. Simple reflex stimulation is of value in the mild forms of asphyxia. Rubbing the back, washing the child's face with cold water, tickling its feet, dilatation of the anal sphincter and sprinkling it with a few drops of ether are the mild and harmless methods in use. Excessive flagellation, the resounding whack that can be heard in the next room, and alternate hot and cold tubs, are the more vigorous forms of stimulation, which, while often effectual, may increase the injury to an already damaged medulla. In the same category is the obsolete Schultze swinging method. In addition to the danger due to rough handling we must consider the unnecessary loss of body heat which attends these methods.

We hear little of the lungmotor and pulmotor now, although they once enjoyed a vogue in the treatment of asphyxia. The Creiselman apparatus is an ingenious bit of

machinery designed to deliver the proper mixture of gases at the correct pressure, but it is costly and requires an expert to use it. We have in use at Harper Hospital a machine built by the McKesson Company, which consists of a mask and a water gauge attached to a tank of carbogen. By means of this the gas mixture can be delivered to the child in pressures up to eight inches of water. This amount of force is generally admitted to be safe.

The Drinker apparatus is much more complicated and is very expensive. The child is placed in the respirator with only its head exposed to the outside air. Passive artificial respiration is then produced by using negative pressure. In addition one can give carbogen through a mask. This is an excellent method, but its use is restricted to the large hospitals.

Of recent years the fire department has been introducing its treatment of asphyxia into the birthroom. No doubt, the rescue crews are gentle, well trained, and willing, but by the time they can reach the embarrassed infant valuable time will have been lost. Furthermore, if a competent physician is unable to resuscitate a child with his own equipment, the rescue squad will also fail.

The tracheal catheter may be used to deliver oxygen to the lungs. After the air passages have been cleared, it is introduced into the larynx and the expired air of the operator is gently blown into the free end. This is followed by careful compression of the chest and the maneuver is repeated eight to ten times a minute until respiration is established. But unless the tracheal catheter closely fits the opening in the glottis the air may leak back without entering the lungs.

This brings us to a consideration of mouth to mouth breathing. Like all other methods this one also has disadvantages, the first of which is infection. There is very slight chance of contaminating a child despite the fact that our mouths harbor pathogenic organisms at all times. The possibility of the operator contracting gonorrhea is also very remote even in the presence of an active infection. Syphilis, however, can enter at any point on the body, and it would be well to know first whether or not the patient has a positive Wassermann.

Then there is the danger of using too much pressure. It is generally stated that six to eight millimeters of mercury is the limit, but Caryllos and Birnbaum found that it

took fourteen centimeters of water to inflate an atelectatic lung in a dog. If we exceed this pressure, we may rupture the lung and cause death.

The advantages of mouth to mouth breathing will often outweigh the objections. First and most important, it requires no apparatus and is, therefore, always ready for use. We can satisfy the physiologist by using expired air with 4 per cent of carbon dioxide, although, for my own part, I believe this to be a matter of small importance. Since most of the babies are delivered in the home and since only a few hospitals have Drinker respirators or other mechanical means of resuscitation, the mouth to mouth method must be relied upon to revive the vast majority of asphyxiated children. For this reason I wish to describe it in detail.

First, the child is held up by the feet and the trachea milked to remove all mucus and amniotic fluid. It is then wrapped in a warm blanket and laid on a hot water bottle on a flat table. With either a tracheal catheter or an ordinary rubber tube of small caliber the larynx is cleared by suction. The hot water bottle under the body allows the head to fall backward, thus straightening the trachea. The nose is held by the thumb and forefinger of the left hand and the chest is held by the right. The mouth is then filled with expired air, the glottis is closed to prevent using too much, and with gentle pressure the air is forced into the child's lungs. The interposition of a piece of gauze between the mouth of the operator and the mouth of the infant is no protection against infection and merely interferes with the proper carrying out of the procedure. After the mouthful of air is delivered to the child the chest is compressed gently and then the maneuver is repeated about eight to twelve times a minute. Nothing is more dramatic than the way the heart picks up and the cyanosed child becomes pink. As a rule in a few minutes spontaneous respirations begin and soon it is breathing normally. Of course, the ultimate prognosis depends upon the extent of the infant's injuries. No method of treating asphyxia will have any influence upon cerebral hemorrhage.

I do not wish to be construed as deprecating the value of the carbon dioxide mixtures. Acute asphyxia is first and foremost a problem of tiding the child over a period of injury when its need is oxygen. Then, when respiration is established, the question

of gas mixture assumes great importance. Unless properly handled many resuscitated children will succumb to secondary asphyxia, which is an unscientific term covering several distinct pathological conditions. In the first place, a baby with a severe cerebral lesion may be revived only to die of its injury. Or the baby may develop adrenal hemorrhages and other intra-abdominal lesions which are not compatible with life. Others die of atelectasis and pneumonia, the result of faulty aëration of the lungs at birth. All those conditions have been grouped under the meaningless term of secondary asphyxia. It is in the cases of faulty aëration of the lungs that carbon dioxide has produced a revolutionary change in treatment. The mixture is probably of little use in initiating respiration, but it is invaluable for increasing the rate and amplitude of breathing.

This is easily understood when we recall the pulmonary expansion is gradual. The first breaths are very shallow, probably only from thirty to fifty cubic centimeters of air. When the baby cries loudly it closes the glottis and the pressure thus created increases the area of expansion and the child picks up quickly due to the increase in the depth of inspiration. If the child does not cry and respirations remain shallow and weak, the oxygen-carbon dioxide mixture has a very pronounced stimulating effect. As a matter of fact, if this mixture is administered for more than fifteen minutes, there is danger of exhaustion. Therefore, we usually restrict its use to a quarter of an hour.

The relation of pneumonia to atelectasis is well known. If an area of the lung is not expanded, the pulmonary circulation is decreased and we get stasis and infection. The resulting pneumonia may be fatal. In all asphyxiated infants it is a good plan to systematically aërate their lungs several times a day by administering carbogen. If we check this treatment by X-ray studies, we will see extensive atelectatic areas clear up rapidly.

In conclusion, let us remember that the problem of acute asphyxia is one of a distressed child. The ultimate diagnosis is immaterial. Whether we have simple anoxemia or cerebral hemorrhage, the infant needs, first, warmth; second, removal of obstruction in the air passages; and finally, oxygen. Later, to prevent persistent atelectasis and pneumonia, carbon dioxide is indicated.

Acute asphyxia is an emergency that requires prompt and efficient treatment. The Drinker respirator and the various forms of apparatus designed to deliver oxygen and carbon dioxide at controlled pressures are good, but they are expensive and are often out of order. The tracheal catheter is cheap and easily available. Mouth to mouth breathing is probably more efficient than any other method but great care must be used to avoid excessive pressure. The danger of the operator infecting himself is slight but must be borne in mind. No special apparatus is required and it is recommended that all those practising obstetrics thoroughly familiarize themselves with its details.

DIETARY TREATMENT OF PSORIASIS

Jay F. Schamber, Philadelphia, calls attention to the statement of Schamberg, Kolmer, Ringer and Raiziss, made after a long and painstaking research nearly two decades ago, to the effect of the influence of diet on psoriasis. The very laborious, extensive and expensive studies in question resulted in the conclusion that there was a positive nitrogen metabolism in psoriasis. Accompanying this presentation of the subject was a series of "before" and "after" photographs, however, which constitute irrefutable documentary evidence of the truth of the statement that a "low protein diet" in the sense in which this term was employed has an enormous influence on the course of the psoriatic eruption. Within the period of eighteen years that has elapsed since the publication of the "Research Studies in Psoriasis," further evidence has come to the author of the verity of the foregoing statement. In only one case

of psoriasis has he not been able to effect a virtual disappearance of the psoriasis eruption by diet. He presents two tables in which are given diets of different type that he has employed in the treatment of patients with psoriasis. They contain from 4 to 5 Gm. of nitrogen and sufficient calories to cover the needs of a man doing a moderate amount of work. For hard-working persons, additional butter and cream can be added. One may allow plenty of sugar, and candy may be permitted between meals. These two diets give an idea of the way dietaries of this nature can be arranged, without losing sight of the necessity of a certain amount of variety in the menu. Oysters and ice cream may be added to the diet, as they contain very little nitrogen. To meet individual tastes, substitutions can be made. Berries, asparagus, broccoli, pears and like foods may be inserted in the dietary instead of cabbage and turnips and some of the fruits mentioned.—*Journal A. M. A.*

RELATIONSHIP OF LARYNGEAL PARALYSIS TO MEDICINE AND SURGERY

EDGAR E. POOS, M.D.†

DETROIT, MICHIGAN

Laryngeal paralysis is so often present in diseases of the neck and throat that the laryngologist can be of great aid to the internist and surgeon in the diagnosis, prognosis and treatment of these cases. The recurrent laryngeal nerve supplies all the muscles of the larynx except the cricothyroid; it may be called the motor nerve of the larynx. The recurrent laryngeal nerve is a branch of the vagus also deriving some of its fibers from the spinal accessory nerve at the nodosum ganglion; it therefore follows the course of the vagus through the carotid sheath and in so doing is exposed to the same surroundings on both sides of the neck. But after entering the thorax the recurrent laryngeal nerve follows a different course on both sides of the neck.

On the right side the recurrent laryngeal nerve leaves the vagus as the latter crosses the subclavian artery and, winding behind it, the nerve lies on the apex of the right lung and ascends obliquely between the trachea and esophagus to enter the larynx through the cricothyroid membrane. On the left side it is given off from the vagus as the latter crosses the arch of the aorta. Winding around the arch, it passes upwards to the neck, where it follows the same course as on the right side. But due to its larger course on the left side of the neck it is more exposed there; now following the recurrent laryngeal nerve in the opposite direction in the trunk of the vagus to a center in the medulla oblongata to the floor of the fourth ventricle. Here a lesion involving the center would affect only one cord, viz., on the same side as the lesion. Finally, the cortical centers on each side presiding over the motion of the cords have been found in the prefrontal gyrus of the dog by Krause; just posteriorly to the lower end of the precentral sulcus, at the base of the third frontal gyrus in the monkey; and Semon and Horsley found in carnivora that the center was in the precrucial and neighboring gyrus.

Due to the proximity of other cranial nerves in their origin and course through the skull and neck to the vagus, they are affected also, causing various syndromes.

We may have paralysis due to trouble in the recurrent, vagus or spinal accessory

nerves. If trouble is only in the recurrent, one may have paralysis only. If in the vagus, we will have these symptoms as well. If trouble is in the nodosum ganglion, we will have trouble in heart, supplied by the vagus.

If trouble is above the nodosum ganglion in the region of the branch from the spinal accessory going to the nodosum ganglion or in the spinothalamic tract, we get the syndrome of Avellis, causing vagus paralysis and loss of pain and temperature on opposite side of body, also eleventh nerve paralysis.

If a lesion affects the nucleus ambiguus (vagus and hypoglossus nucleus) together or in region of condylar foramen we have the syndrome of Jackson.

Affections of the nucleus ambiguus (vagus and accessory) result in the syndrome of Schmidt.

Affections in the jugular foramen or in region of posterior lacertus foramen cause paralysis of the ninth, tenth and eleventh nerves or the syndrome of Vernet.

Affections of the vagus in the retro-parotid space would cause paralysis of the ninth, tenth, eleventh and twelfth nerves or the syndrome of Collet and Sicord. If the sympathetic is also involved it is called the syndrome of Villoret.

According to Semon law, fibers going to the abductor muscles are the first involved, and the adductors continue to act for a variable time.

In a progressive organic lesion the muscles are affected in the following order:

- (1) The abductors or the arytenoid posticus.
- (2) The tensors or the arytenoidi interni.
- (3) The adductors or the arytenoid laterales.

†Dr. Poos is a graduate of St. Louis University, 1916. He is a member of the Staff of Highland Park General, Receiving, Providence, and Northwestern Hospitals; Fellow, American College of Surgeons; Fellow, Academy Ophthalmology and Otolaryngology.

Unless the lesion is so gross that complete paralysis occurs the abductor muscles are for a time the only ones affected.

In recovery from complete paralysis the reverse order is observed.

ETIOLOGY

Cortical paralysis is hardly ever isolated, generally secondary to hemiplegia.

Bulbar lesions nearly always cause paralysis of the dilators. Vocal cord cannot be abducted, patient asphyxiated but can speak, as cords are in position of phonation; makes a snoring sound. It is generally due to the syphilis, having the Argyll Robertson pupil also.

In tabes we may have paralysis as a first symptom often affecting both cords with above symptoms. If the paralysis is bilateral it is generally central but central lesions are more often unilateral, but may have bulbar paralysis due to gummas, abscesses, sclerosis, syringomyelia affecting the bulb. Bulbar lesions often affect both the tongue and palate also.

LESIONS IN THE MOTOR FIBERS IN THE VAGUS TRUNK OR RECURRENT LARYNGEAL

Pressure and direct traumatic and operative injuries to the vagus or recurrent laryngeal as in ligature of vessels. Intracranial growths, injuries, hemorrhages or abscesses at base of the skull. Growths and infections in the neck involving vagus close to its exit, close to the skull as in the retro-parotid space or pharyno-maxillary fossa and cervical phlegmons, etc.

Pericarditis for the left nerve, pleural thickenings at the apex of the lung more for the right side. Dilated left auricle or aneurysm of arch of aorta for the left nerve.

Pleural effusions, enlarged bronchial or tracheal glands.

DISEASES OF MEDIASTINAL TISSUES AND GLANDS, CARCINOMA, SARCOMA, TUBERCULOSIS, SYPHILIS AND LYMPHOSARCOMA

Recurrent paralysis often is an early sign of carcinoma of the esophagus, but more often late; if on the right side, the lesion is high up. Malignant tumors of the thyroid, but benign are rare; if benign they are usually cystic.

Following goiter operations due to

trauma hemorrhages, scar tissue or severing the nerve, peripheral neuritis of toxic origin from infection or drugs occurs.

Symptoms.—In the first stage when the posticus is paralyzed, there is no trouble with phonation, pathology only in respiration. Therefore it is found only on laryngoscopic examination; cord in cadaveric position later may be midline. Bilateral recurrent paralysis, however, at its earliest stage does attract attention, not by interference with the voice but by reason of the impediment to respiration, produced by cords, which, due to the unopposed action of the abductors, come to lie near the midline and more or less in contact with each other. The glottis being closed dyspnea results and asphyxia or even death may result as a consequence.

If there is dyspnea with unilateral abductor paralysis, some other cause of it should be sought below the larynx itself, as aortic aneurysm, mediastinal growths or esophageal neoplasm involving the trachea.

In the second stage the tensor of the cord is affected, the thyroid-arytenoideus internus, which causes a lower tone voice or diplophonia, cord is lax, and one can even see the vibrations of cord due to relaxed action. In respiration cord assumes cadaveric position.

In the third stage where the abductors, tensors, adductors or crico-arytenoideus laterales are affected, the paralysis is now complete.

On gentle, quiet respiration the condition may escape notice but on deep respiration the sound cord abducts widely from the middle line while the affected remains passive in the cadaveric position. It is only on phonation that the paralytic condition is distinctly manifested. Then the sound cord not only approaches the midline but may cross it in an effort of compensation to close the glottic space. The affected cord is stationary in the cadaveric position; its free edge remains concave and the voice is feeble and somewhat rough, altered in tone and pitch with an uncontrolled tendency to crack. The vocal cord is often atrophic in the later stages. In complete laryngeal paralysis bilateral on inspiration the cords approach each other, being more marked the greater the effort. This is probably due to the cords being sucked like a valve by the indrawn current of air and rarefaction of

air below the stenosis, or to the still slight action of the stenosis. These people may have inspiratory stridor on slight exertion, mental excitement, during sleep, onset of catarrh, etc.

ADDUCTOR PARALYSIS

Unilateral paralysis is extremely rare, and may be caused by a cold, syphilis, enteric fever, smallpox, or lead poisoning and local causes.

Bilateral paralysis is generally functional unless occurring as a part of a general paralysis of the recurrent nerve. It is found mostly in hysteria, anemia, general weakness, shell shock, neurasthenia and local inflammatory condition of the larynx, sudden emotion, fright, worry, pregnancy, intestinal distress, menstruation, disorders of digestion and intestinal worms, misuse or overuse of voice, tuberculosis, syphilis, typhoid, phosphorus, copper, arsenic and lead poisoning.

Symptoms.—Onset is sudden except in general weakness, where it is more gradual. Voice becomes weaker and more toneless.

In the hysterical form the voice is reduced to a whisper. There is no complaint

of dysphagia; no temperature or physical signs in lungs, but it is often seen in incipient tuberculosis. Examination shows cords in position of respiration. On deep inspiration gap is still wider. Trying to phonate, cords move very little toward midline, but trying to cough or laugh brings the cords to the midline.

PROGNOSIS

The outlook in double abductor paralysis is always very grave as any aggravation may end in fatal asphyxiation.

If only on one side there is no risk of death being due directly to the paralysis but it interferes with speaking, singing and coughing.

It is well to remember that, in addition to paralysis of the cord by aneurysm, esophageal cancer, goiter, there may be stenosis lower down, due to direct compression of the trachea or the bronchi from the same cause.

TREATMENT

We should treat the cause of the paralysis. Later we may use galvanism, strychnine, iodides, etc.

554 FISCHER BLDG.

A REPORT OF THREE CASES OF TRICHINIASIS WITH ONE DEATH*

C. N. SOWERS, M.D.†
BENTON HARBOR, MICHIGAN

Ovoid cysts in human muscle were first described by Tiedman in 1822,¹ and by Hilton in 1832.² Leidy, in 1845,³ described them in the pig. In 1860,⁴ Zenker described both the intestinal and muscle forms in a girl and established their connection with this serious and often fatal disease.

The adult female parasite measures three to four mm. in length; the male one and one-half mm. in length. The larvæ or muscle trichinæ are from six-tenths to one mm. in length, and lie coiled in ovoid capsules which later may become calcified.

When flesh containing trichina is eaten, the capsule is digested, and the trichinæ are set free. They pass into the small intestine and in about three days are full grown and sexually mature. The female worm penetrates the mucosa of the intestine and deposits the embryos in the lymph spaces, from

whence they pass into the general circulation, reaching the voluntary muscles in about two weeks, where they develop into the full grown muscle form.

The *Trichinella spiralis* is found in the flesh of swine, dogs, cats, rats, mice and also in bears and their relatives. Even beef may contain the trichina. The parasites have been found in the abdominal cavity, pleural cavity, pericardium, and the meningeal spaces. Usually they remain in the blood

*Reported at Staff meeting of Mercy Hospital, April 12, 1932.

†Dr. C. N. Sowers is a graduate of the Medical Department of the University of Michigan, June, 1893. He is Chief of Staff, Mercy Hospital, of Benton Harbor. He was a member of the editorial staff of the first University of Michigan Daily, published in 1890.

stream until they reach the skeletal muscles. Even four to six weeks after ingestion of the trichina, migrating young parasites have been found in the organism, since the female deposits larvæ for several weeks, after which both male and female die. The larvæ

parasites ingested, while other writers differ, saying that it is no more logical than to assume that the number of streptococci entering the blood stream governs the degree of sepsis resulting.

Because of the public health aspect of this



Fig. 1. Photomicrograph showing two *Trichinella spiralis* embedded in the voluntary muscle of the patient in the fatal case.

are seldom found in stools. They have been found several times in the sediment of the blood of the cubital vein.

With the encysting of the larvæ, after the fifth week the morbid picture begins to lose the inflammatory and painful character, yielding to a protracted convalescence. Months and years later attacks of pain in the joints and muscles, fever and swelling may reappear. Such cases may be regarded as chronic trichiniasis. Cases with an unfavorable course usually succumb between the fourth and seventh week; fatal cases have been described due to intestinal complications. The mortality varies from nothing to 30 and 40 per cent. This high mortality shows that the morbid process is not limited to the muscles, but affects the organism as a whole.

The seriousness of the disease according to some writers depends on the number of

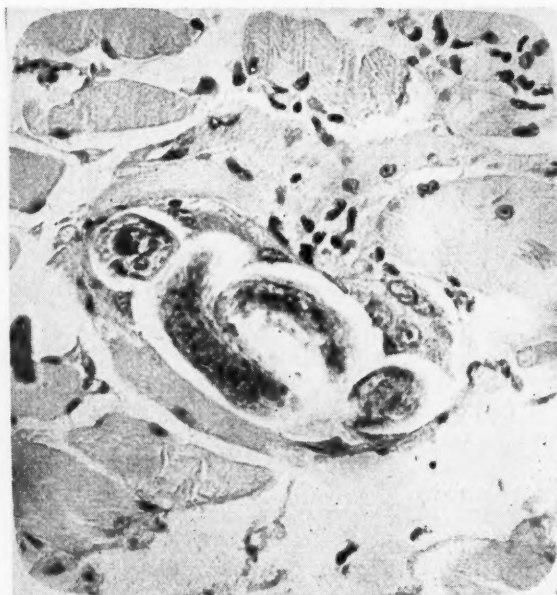


Fig. 2. A higher power photomicrograph of the lower left hand parasite shown in Figure 1.

disease the following is a report of three cases:

On February 15, 1932, I was asked to see two patients of a family of three living four miles from the city of Benton Harbor. The family consisted of the husband, fifty-two years of age, the wife, forty-one, and a boy, seven years of age. They were all ambulatory, the little boy apparently not sick. The wife's temperature was 100, and her pulse 140. The husband had a temperature of 103.8, and a pulse of 120. I paid little attention to the boy as I was informed he had not been sick, and appeared well at the time. The wife's eyes were much swollen and the next day when she was taken to the hospital, her eyes were completely closed.

History: The wife had an onset of diarrhea four weeks prior to February 15, disappearing, then returning with renewed violence after a few days. The onset of the husband's symptoms was with diarrhea a few days after his wife. The son did not have diarrhea. Stools were frequent, from twelve to fifteen in twenty-four hours, and of an offensive odor, and greenish in color. They did not vomit at any time. The first thought of trichiniasis was the next day when blood examination showed a high eosinophile count in all three patients, ranging from 42 to 47 per cent. Water analysis of their shallow well was negative; Widal agglutination, blood culture, examination for *B. abortus*, and the examination of the stools were all negative. The swollen eyes, the muscular soreness, the great prostration, insomnia, anorexia, sweating, eosinophilia, and the history that they had eaten smoked, but raw, sausage led me to make a positive diagnosis of trichiniasis. I did not make a biopsy. A consultant saw the cases with me on February 25 and confirmed the diagnosis. The

wife died on February 26, at the beginning of the sixth week of illness, of cardiac failure and what was apparently paralysis of some of the respiratory muscles. She went down very rapidly for the last eight or ten hours, while twenty-four hours before her death she did not seem to be in any immediate danger.

The blood picture in the two adult cases was peculiar in so far as the leukocyte count is concerned. The wife had a count of 26,350, while the husband had a count of 6,250. There was a lowered polymorphonuclear count and an increase in the large lymphocytes. The erythrocytes were materially reduced, showing a marked secondary anemia.

The temperature in all three cases was for some time remittent ranging from 100 to 103. Later it was intermittent in the husband's case. One of the most pronounced symptoms was the great muscular weakness, the patients not being able to turn themselves in bed without great effort, or without assistance. The diarrhea ceased in the wife's case, but the husband still in the hospital (March 27) had three thin movements daily, and was so weak he could not sit up more than fifteen or twenty minutes at a time, although he had no fever for more than two weeks.

Dr. German of Grand Rapids, pathologist to the Benton Harbor Hospital, examined the tissue which was removed from the biceps of the wife after death. Following is his report: "Sections of voluntary muscle show there are many *Trichinella spiralis*. In a few places there is intense inflammation as shown by polynuclear infiltration." (Figs. 1 and 2.)

Samples of the sausage examined by the State Agricultural Department showed many *Trichinella spiralis*.

Treatment: There is little treatment of any effect after migration of the parasites. Calomel and castor oil are recommended and were given. Santonin and cacodylate of sodium were also given. Later ferric ammonii citratis was given for the anemia. Otherwise, the treatment was symptomatic.

Algora⁵ of Spain relates that there have been a number of cases of trichinosis in his district and that seven cases treated by intravenous injections of neoarsphenamine, .45 gm., promptly recovered. Two or three injections were usually necessary. In one case the edema and the fever subsided so promptly after the first injection, that there was no necessity to repeat it.

Wolfgang⁶ of Germany says neosalvarsan had no effect in his experience in some cases, but gave sufficiently good results to warrant its use in further cases.

Prophylaxis is the best treatment. Thorough cooking of all swine flesh will prevent the disease. Well kept pigs are much less likely to harbor trichinae than cats and dogs.

SUMMARY

1. Three cases of trichiniasis are reported. The source of the infestation determined and the parasites demonstrated in one case.

2. These cases showed that there is no definite ratio between the leukocyte count and the eosinophil count.

3. Though each case differed in severity the eosinophilia was the same and hence it

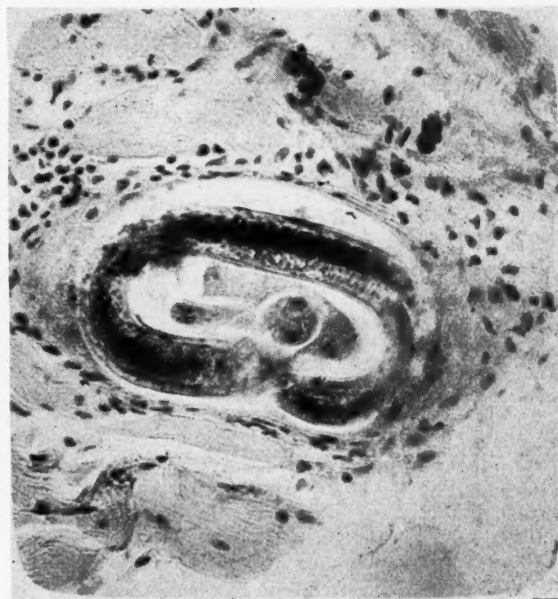


Fig. 3. High power photomicrograph of parasite embedded in voluntary muscle surrounded by a zone of cellular reaction.

is not an index to the severity of the disease.

4. The disease began differently in the different members of the family and one did not possess any of the pathognomonic signs of the disease, such as edema of the eyelids, muscular pains, remittent fever and gastrointestinal manifestations.

The feeding of infected meat of dead animals to pigs is probably a factor in the maintenance of the disease. This is not uncommonly done by some cities where garbage disposal plants are not available. The United States Bureau of Animal Industry require 58.33° C. as the minimum temperature at which all pork products must be cooked in establishments operating under federal inspection. This inspection is not done on hogs sold from city garbage dumps where the chance of becoming infested by trichina is great, and hence cases like the above described are not infrequent.

REFERENCES

- 1, 2, 3 and 4. Osler: Principles and Practice of Medicine. 12th Edition.
5. Algora: A. J. A. M. A. Siglo Medico, Madrid, April 12, 1924.
6. Wolfgang et al.: Medizinische Klinik, April 29, 1927.

A CASE OF PRIMARY CARCINOMA OF THE LIVER IN AN INFANT

MERLE PIERSON, M.D.† and MARY CAMPBELL, M.D.‡

DETROIT, MICHIGAN

In 1929, Kilfoy and Terry¹ reported a case of primary carcinoma of the liver in a child and collected from the literature forty-three other cases, sixteen of which they regarded as authenticated. A case was described by Taillens² in 1930. To these we wish to add another to emphasize the importance of considering carcinoma of the liver in a differential diagnosis of tumors of the abdomen in children.

REPORT OF A CASE

B. J., the patient, was in good health until the age of eleven months, when he developed a diarrhea which proved resistant to treatment. When he was fourteen months old, his mother noticed a mass in the right side of the abdomen. He was seen by numerous physicians and also at a university clinic. Here his hemoglobin was found to be 37 per cent and his white count 19,200 with 62 per cent polymorphonuclear leukocytes. The morphology of the red cells suggested chronic hemorrhage; no abnormal white cells were seen. The urine was negative. A roentgenogram showed an irregular dense shadow in the central abdomen, due, it was thought, to a retroperitoneal tumor or to a tumor of the right kidney. There was no visualization with skiodan.



Fig. 1. Posterior surface of liver.

Later Dr. Van Hoosen of Chicago obtained excellent plates with uroselectan. On the basis of these plates, the finding of pus in the urine, and a fever rising at times to 103, a diagnosis of hydronephrosis of the right kidney with possible tumor was made, and on October 24, 1931, the child was admitted to the Woman's Hospital, Detroit, for an exploratory operation. He had been restless and seemingly in pain for the two days previously and he had had a cough for a week.

Examination at time of entrance called attention

†Dr. Merle Pierson is a graduate of the Medical School, University of Michigan, 1922. Practice limited to pediatrics.

‡Dr. Mary Campbell is a graduate of the Detroit College of Medicine and Surgery, 1922. She is a member of the staff of the Woman's Hospital, Detroit.

to the pallor (the hemoglobin was 39 per cent Sahli), and to the enlargement of the right side of the abdomen, where a hard mass was felt, apparently the right kidney, although inseparable from the liver, which was definitely a hand's breadth below the rib margin. No fluid wave was demonstrable. The white count before operation was 28,000 with 86 per cent polymorphonuclear leukocytes.

At operation, the kidney was found to be grossly normal but the liver nodular and greatly enlarged. There was a moderate amount of bloody fluid in the peritoneal cavity. The question of a luetic infection was considered but because of negative Kahn tests on mother, father, and child, the diagnosis of primary carcinoma of the liver was made. After the operation, the liver increased rapidly in size and the child died three days postoperatively.

A partial necropsy was done. The only grossly

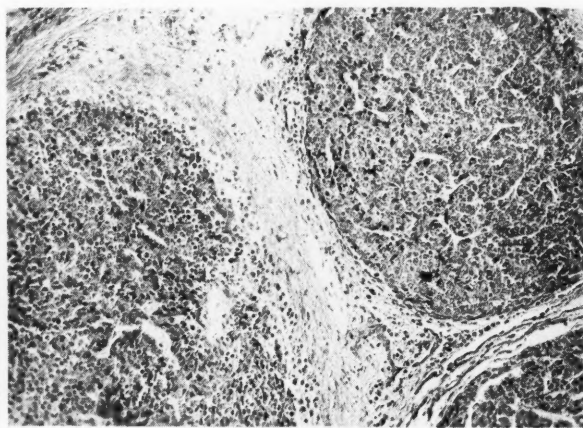


Fig. 2. Low power microscopic picture.

pathological organ in the abdomen was the liver, which measured 19 by 21 cm. The right lobe extended down to the pelvis. It was covered with irregular cauliflower-like masses from one to five centimeters in diameter. At the upper pole was a large nodule mottled with blood and fluctuant. On the posterior surface very little normal liver tissue was seen (Fig. 1). The left lobe was apparently uninvolved. On section, the nodules extended through the stroma of the right lobe and the larger ones showed varying stages of necrosis. Microscopic examination revealed circumscribed areas of darkly staining small anaplastic cells arranged in columns and acini (Fig. 2). There were scattered mitotic figures. The left lobe, while grossly free from malignant changes, showed emboli of carcinomatous cells. The final diagnosis was primary carcinoma of the liver, probably bile-duct type.

COMMENT

The clinical symptoms of primary carcinoma of the liver are few and in no way characteristic since they depend on the effects of pressure by the tumor and on necrosis and hemorrhage in its substance. Jaundice is rare. The metastases are intrahepatic and occasionally to the lungs. Liver function tests may be helpful. Nadler³ mentions also the occasional finding of hypoglycemia in primary liver cell carcinoma. Again, elevation of temperature and of white count are common in carcinoma, especially of the liver.

Such cases as the above are perhaps more frequent than reports from the literature

would indicate, since a similar case was discovered in a local hospital in October, 1931. In 1907, Philipp⁴ pointed out that 13 per cent of all cancers in childhood occur primarily in the liver, in adults only 6 per cent. Consequently, when confronted with a tumor of the abdomen in a child, one would do well in the differential diagnosis to consider primary carcinoma of the liver.

BIBLIOGRAPHY

1. Kilfoy, Edward, and Terry, M. C.: Primary carcinoma of the liver in childhood. Surg., Gynec. and Obst., 48:751 (June), 1929.
2. Taillens, J.: Un cas de cancer du foie chez un nourrisson. Rev. med. de la Suisse Rom., 50:607 (Aug. 25), 1930.
3. Nadler, Walter, and Wolfer, John A.: Hepatogenic hypoglycemia associated with primary liver cell carcinoma. Arch. Int. Med., 44:700 (Nov.), 1929.
4. Philipp, P. W.: Ueber Krebsbildungen im Kindesalter. Ztschr. f. Krebsforsch., 5:326-416, 1907.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, Dr.P.H., M.D.,
Health Commissioner
LANSING, MICHIGAN

REGISTERED LABORATORIES

All laboratories in Michigan making chemical, serological or bacteriological tests to aid in the diagnosis of communicable disease and laboratories where live pathogenic germs are handled are required by law to register with the Michigan Department of Health. The list of registered laboratories as of May, 1932, follows:

LABORATORIES REGISTERED UNDER ACT NO.
45, PUBLIC ACTS OF 1931

An act to protect the public health; to provide for the registration and supervision of public laboratories making chemical, serological and/or bacteriological laboratory tests to aid in the diagnosis and/or control of communicable disease; and to prescribe penalties for violation thereof.

May, 1932

Reg. No.	Location	Name of Laboratory
133	Albion	Sheldon Memorial Hospital
4	Ann Arbor	City Laboratory
75		Cowie Hospital
129		Dept. Ped. & Infect. Disease University Hospital
144		Pasteur Institute
5		St. Joseph's Mercy Hospital
127		University Health Service
6		University of Michigan Hospital
10	Battle Creek	City Health Department
11		L. Y. Post Montgomery Hospital
70		Nichols Memorial Hospital
13	Bay City	City Health Department
137		Jones Clinic
14		Mercy Hospital
122	Coldwater	State Public School
76	Detroit	W. L. Brosius Laboratory

140		Chas. Godwin Jennings Hospital
18		Children's Hospital
100		H. L. Clark Clinical
17		Delray General Hospital
1		Detroit Department of Health
88		Dunbar Memorial Hospital
143		Eye, Ear, Nose & Throat Hospital
136		Florence Crittenton Hospital
21		Grace Hospital
73		Harper Hospital
22		Henry Ford Hospital
142		Medical Clinic
23		H. A. Meinke Laboratories
135		Motor City Testing (water, milk)
24		Nat'l Pathological Laboratory
102		North End Clinic
25		Owen Clinical Laboratory
131		Perry Testing (water, milk)
26		Physicians' Service Laboratory
27		Providence Hospital
28		Receiving Hospital
67		Robison Laboratories, Inc.
31		St. Joseph's Mercy Hospital
32		St. Mary's Hospital
95		Stafford Biological Laboratories
117		Woman's Hospital
139		Wells Drake Laboratory
33	East Lansing	Michigan State College
97	Eloise	Eloise Hospital
35	Flint	Board of Health
36		Hurley Hospital
112		Women's Hospital
38	Grand Rapids	Blodgett Memorial Hospital
37		Butterworth Hospital
40		Brotherhood Private Laboratory
41		St. Mary's Clinical
42		Western Michigan Clinical
2		West. Mich. Division, Mich. D. Health
116	Grosse Pointe	Cottage Hospital
94	Hamtramck	Public Health Laboratory
44	Highland Park	General Hospital
124	Howell	Michigan State Sanatorium
3	Houghton	Branch Laboratory, Mich. D. Health
43	Ironwood	Grand View Hospital
130	Ishpeming	Ishpeming Hospital
87	Jackson	Jackson Clinic
45		Mercy Hospital
91	Kalamazoo	Bronson Methodist Hospital
119		Fairmount Hospital
47		Kal. Public Health Laboratory
48		Kalamazoo State Hospital
46		New Borgess Hospital
121	Lansing	Edw. Sparrow Hospital
0		Michigan Department of Health
69		St. Lawrence Hospital
125	Lapeer	Michigan Home & Training School
145	Ludington	Paulina Stearns Hospital
126	Marquette	Morgan Heights Sanatorium
134		St. Luke's Hospital

141	Monroe	Diagnostic Clinic
104		Mercy Hospital
51	Mt. Clemens	Braun Clinical Laboratory
68		Persson Foundation
50		St. Joseph Hospital
53	Muskegon	Hackley Hospital
54		Mercy Hospital
118	Niles	Pawating Hospital Clinical
111	Northville	Wm. H. Maybury Sanatorium
123		Wayne County Training School
55	Olivet	Olivet College
107	Owosso	Memorial Hospital
66	Petoskey	Petoskey Hospital
56	Pontiac	Dept. of Public Health
71		Pontiac General Hospital
57		Oakland Co. Health Dept.
128		Pontiac State Hospital
132		St. Joseph Mercy Hospital
120	Port Huron	Port Huron Hospital
58		St. Clair County
83	Roseville	Department of Health
108	St. Johns	Clinton Memorial Hospital
59	Saginaw	Central Laboratory
62	Traverse City	Traverse City State Hospital
63	Wyandotte	Wyandotte General Hospital

Sault Ste. Marie	Chippewa Co. War Memorial Hospital
Sturgis	Memorial Hospital
Three Rivers	Three Rivers Hospital
Ypsilanti	Beyer Memorial Hospital

PRESENT STATUS OF LIGHT THERAPY: SCIENTIFIC AND PRACTICAL ASPECTS

Edgar Mayer, Saranac Lake, N. Y., states that although there is much information concerning results of irradiating man and animals, explanations and indisputable generalizations are sadly lacking. When it is realized that even in photochemical reactions the physical process is not completely understood, the difficulty of explanation in biology and clinical medicine becomes more evident. No single explanatory hypothesis for the results ascribed to light action can yet be formulated, as there is great need of data obtained under definitely controlled conditions of dosage, intensity and wavelengths in normal and in abnormal organisms. There is a lack of agreement between the practical and therapeutic results and the scientific and experimental observations. Experiments have been carried out for the most part on healthy men and animals, whereas usually the practical results have been obtained on the sick. The abnormal organism is much more sensitive. Diseased tissue may vary from normal in sensitiveness to radiation. The animal skin is not perhaps comparable to the same organ in man (as, for example, in exposing shaved guinea-pigs to sunlight, it is most difficult to produce erythema). In many reports the importance of sky radiation has been ignored, whereas it is possible that the beneficial effects of sunlight are in a great measure due to its luminous and infra-red portions. The sun, with its accompanying factors of environment, can hardly be compared to artificial sources of light. The exact physiologic effects of light or of the air bath alone are not clearly understood, nor is the effect of light on single cells. In application, dosage has been difficult to control, and marked variation in the effects comes from a small stimulative or a larger destructive dose of light. Similarly, the technic of application with most workers has been different. Published experiments lack specific details in many instances, especially those pertaining to the spectrum, such as its limits and the distribution and the character of the radiant energy employed. These must be defined accurately instead of attributing results merely to "ultraviolet energy." Perhaps this is the cause of the contradictory nature of many of the results published. Controversies constantly take place between the proponents of the use of sunlight and those of artificial sources. The value of sunlight for one form of disease against another, for instance pulmonary tuberculosis as against the extra-pulmonary forms, is a subject for debate. The advantages of different artificial sources of energy are still open questions. The workers in high altitudes are still enthusiastic in expounding their clinical results in contrast to those in the lowlands. This difference of opinion appears in part due to the fact that, in the development of the use of light for disease, only empiric results were known for many years before accepted laboratory evidence was produced which placed light therapy on a scientific basis. The author emphasizes the fact that harm may be done by the injudicious and uninformed use of light. Valuable as this method has proved itself to be in a limited number of diseases, it is surely clear that much more investigation and many more scientific data are required before light should be generally prescribed by those unfamiliar with the contraindications and the details of its application.—*Journal A. M. A.*

LABORATORIES NOT REQUIRED TO REGISTER FOR LABORATORY DIAGNOSIS BUT REGIS- TERED FOR HANDLING PATHOGENIC ORGANISMS UNDER ACT NO. 157, PUBLIC ACTS 1931

An act to protect the public health; to provide for the registration and supervision of laboratories where live pathogenic germs are handled; to prevent the use of bacteria for criminal purposes; to eliminate careless methods of transporting live germs, and to prescribe penalties for the violation of this act.

May, 1932

Reg. No.	Location	Name of Laboratory
98	Albion	Albion College
74	Ann Arbor	Hygienic Laboratory, University of Michigan
82		Michigan Biol. Supply Co.
7	Battle Creek	American Legion Hospital
8		Battle Creek College
86	Detroit	Cass Technical High School
138		College of City of Detroit
96		Detroit College of Med. & Surgery
19		Difco Laboratories
20		Frederick Stearns & Co.
89		Marygrove College
65		Parke Davis & Company
30		G. H. Sherman
39	Grand Rapids	Burleson Sanitarium
77		Junior College
80	Holland	Hope College
103	Highland Park	Highland Park Water Department
101	Iron Mountain	City Water Department
81	Kalamazoo	The Upjohn Company
99	Lansing	Bio. Products Division, Mich. D. Health
93		Michigan Dept. of Agriculture

LABORATORIES REGISTRATION PENDING

Location	Name
Alma	Gratiot General Hospital
Battle Creek	Battle Creek Sanitarium
Detroit	East Side General Hospital
Escanaba	St. Francis Hospital
Goodrich	Goodrich Hospital
Howell	McPherson Memorial Hospital
Iron Mountain	Itzoff Clinical Laboratory
Jackson	City Department of Health
Jackson	Foote Memorial Hospital
Menominee	St. Joseph's Hospital
Newberry	Newberry State Hospital

THE JOURNAL

OF THE

Michigan State Medical Society

PUBLICATION COMMITTEE

J. D. BRUCE, M.D., Chairman.....Ann Arbor
A. S. BRUNK, M.D.....Detroit
B. H. VAN LEUVEN, M.D.....Petoskey

Editor

J. H. DEMPSTER, B.A., M.D.
641 David Whitney Bldg., Detroit, Michigan

Business Manager and Editor County Society Activities
FREDERICK C. WARNSHUIS, M.D., D.Sc.
2642 University Avenue, St. Paul, Minnesota, and
Grand Rapids, Michigan

All communications relative to exchanges, books for review, manuscripts, should be addressed to J. H. Dempster, M.D., 641 David Whitney Bldg., Detroit, Michigan.

Reprints of papers published will be furnished authors at cost if the order is placed at the time the galley proofs are returned to the editor. *The cost of illustrations is to be defrayed by the author of the paper whether reprints are ordered or not.*

Contributors are responsible for all statements, conclusions and methods in presenting their subjects. Their views may or may not be in agreement with those of the editor. The aim, however, is to allow authors as great latitude as the general policy of The Journal and the demands on its space may permit. The right to reduce in length or to reject any article is reserved. Articles are accepted for publication on condition that they are contributed solely to this Journal.

All communications regarding advertising and subscriptions should be addressed to F. C. Warnshuis, M.D., 2642 University Avenue, St. Paul, Minnesota, or Suite 1508 Grand Rapids National Bank Bldg., Grand Rapids, Michigan.

JULY, 1932

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon

EDITORIAL

HEALING CULTS

The committee on the Cost of Medical Care have considered the healing cults. The results of their study are embodied in a volume, *The Healing Cults: A Study of Sectarian Medical Practice; Its Extent, Causes and Control*. There are 36,000 individuals other than the 142,000 trained and licensed members of the medical profession who hold themselves out as able to treat the sick. The four main groups of healers comprise osteopaths to the number of 7,650 with forty-two million dollars spent annually for their services; 16,000 chiropractors who receive sixty-three million dollars;

naturopaths and allied groups 2,500 who receive ten million dollars; and christian scientists and new thought healers, ten thousand in number, to whom is paid the sum of ten million dollars. The medical training of these cults is said to be inferior to that of physicians or to be entirely lacking. Commenting, the author states, which is only too apparent, that the existence of so large a number of sectarian practitioners is dangerous to the public's health and much of the one-hundred and twenty-five million dollars is not wisely spent.

The control of such a situation entails first a study of the causes which brought the cultist into being. Of the non-religious sectarians the osteopath presents the best claims. Yet the training received by the osteopath is much inferior to that received by the regular doctor of medicine. The chiropractor and the naturopath are to a large extent ignorant of the established facts of medicine and are therefore a menace to public health. The individuals who practice religious healing do not pretend to be doctors. It is readily apparent to the medically trained mind that such groups produce a serious situation in as much as pathologic conditions which might have received help had they been detected early, are permitted to progress until too late for medical or surgical relief—such surgical conditions as cancer and acute appendicitis or such medical conditions as diphtheria, malaria or syphilis. The author refers to the folly of communities which maintain an elaborate public health machinery to prevent the spread of certain communicable diseases, in permitting individuals to practice who are unable to distinguish diphtheria from pneumonia or scarlet fever from measles. The non-religious sectarians are possible owing to popular ignorance which looks upon a cult as possessing merit because it happens to be new as compared with a profession which has had a long period of evolution. The religious sectarians owe their existence in part to the fact that doctors have failed to give attention to what they considered minor functional ailments.

There are two ways of meeting the situation. First, legal, which involves the suppression of sectarians by the law; the other educational, which involves education of the public in health matters, and which involves a training of the would-be cultist by insisting on passing examination in the sciences

basic to the healing art. This latter involves a single minimum standard of qualification of all healing practitioners. Basic science laws so-called are in operation in six states of the Union as well as in the District of Columbia. These laws provide that all those who treat disease or hold themselves out to do so irrespective of whatever schools they belong to, or whatever healing agent or agents they use, before being eligible for license must pass examinations in the so-called basic sciences. These basic science laws have been found to work satisfactorily. The number of incoming cultists has been drastically reduced. Of those who do qualify by passing the basic science laws, the training they have received has a tendency to breed caution on their part with the result that little, if any, harm is done to the public.

PROPHYLAXIS AGAINST MALPRAXIS

Medico-legal defense committees in connection with county medical and state medical societies find an increasing number of malpractice suits against members of the medical profession. This is to be expected considering the prevailing financial depression. A great many of these claims, probably the majority of them, are groundless as shown when they come to trial. However, no one wants to face the uncertainty of outcome and expense of defense even though there may be no just grounds for complaint on the part of the patient. A great many of these threats might be obviated if members of our profession exercised more discretion in listening to the complaints of dissatisfied patients of other doctors. The board of censors of a county medical society in one of the southern states has sent broadcast a letter to each of its members from which we quote the following paragraph:

"From information at hand it seems that not infrequently the seed of dissatisfaction is, perhaps unintentionally, sown by a fellow doctor, especially where a change in doctors has been made during the course of an illness. The Board of Censors feels sure that no member of this society would purposely create the feeling on the part of a patient or his family that another doctor had been negligent or had handled a case improperly, but it wishes to call your attention to the necessity for caution in discussing with laymen any other doctor's handling of a case. The layman's statement as to what another doctor did under given circumstances cannot always be relied upon as to accuracy, so we should not criticize the other doctor because of such statement, even though the statement may make it appear that criticism may be justified. In discussing

methods of treatment, one method as compared with another may be only a matter of individual preference on the doctor's part and not one vital in principle. The layman is not likely to understand this, and too much talk, which may appear harmless to the doctor, may start an unnecessary and unwarranted damage suit."

The letter concludes with the advice that each of us adopt the Golden Rule in our relations with our fellow practitioners. We will then avoid even an implied criticism of any other doctor in the handling of any given case.

THE FILAMENT-NONFILAMENT COUNT

Renewed interest is being displayed in hematology by clinicians and particular attention is being paid to those methods that have been developed to furnish a ready means of observing more closely the contest between invader and host in infection. Arneeth's original method of classifying the polynuclear cells, with its complicated technique, has of late been simplified so that the "polys" are divided simply into old or filament, and young or non-filament cells, the latter offering an accurate index of the severity of an infectious process. This modification known as the filament-nonfilament count is rapidly replacing the commonly used differential count and many hospital laboratories are adopting it as a routine procedure.

The paper entitled, "The Routine Use of the Filament-Nonfilament Count" which is published on page 443 of this issue of the Journal, details the experience with this valuable clinical aid in a series of one hundred hospital patients. It offers the reader a clear explanation of the method so that he may at least know how to interpret a count of this kind when it is made for him.

TAXATION

It is probably within the truth to say that there never was a fair and equitable system of taxation. Direct taxation tends to penalize thrift and industry and to place a premium on incompetence and indolence. The State (using the term to mean organized government) requires money; it proceeds to obtain it in the easiest way. Real property is stable and tangible, therefore it comes in for the burden of taxation. If not paid within a specified time the property in question may be confiscated and sold for taxes,

as we have numerous instances before us. Should there not be some other basis for taxation than real estate? Rentals of course are taxed as income. We have opposed the extension of the income tax, because of the fact that, through exemptions, it is limited to comparatively few persons. The tax should be as democratic as the vote. There might not be the same objection to income tax if every person who earned an income, no matter how small, paid his portion, even though that portion might be only a few cents. There should be no class of earner exempt whether he is a government employee or not and no part of any person's income should be exempt. The taxation of incomes under such a scheme would be a tax on production, that is on a man's earning power, which would be more just than a tax on his home; his home thereby would be protected in the event of his non-employment; or, in the case of his death, the home would be preserved for his widow and family, who perhaps might not be in a position to pay taxes. In guaranteeing the rights and liberties of the citizens of the United States it is doubtful if the makers of the constitution ever meant that a man should forfeit his home to the state owing to his inability to pay taxes on it.

Of course there are many other legitimate sources of taxation. There seems no valid reason why luxuries of all kinds should not bear a share of the burden. A sales tax of some sort is an equitable tax; paid once it should do away with the personal tax whereby one is taxed year after year until he in the end pays more tax than the article cost him. The personal tax is in many instances the most iniquitous impost that has been devised. It is as a rule discriminatory, imposing a burden upon those who fill out the forms properly and favoring those who are disposed to place their surplus funds in non-taxable securities.

A good basis for taxation would be incomes, that is the income of everybody who is engaged in any gainful pursuit and no exemptions. Luxuries, all of them, might well be taxed. In addition to this the sales tax paid once when an article is purchased would do away with all future imposts by city, county and state.

What, however, is universally needed is economy and retrenchment in the management of civic affairs. We have been assured recently by the Governor of Michigan

in an address before the Wayne County Medical Society that the legislators at the last session of the Michigan State legislature worked in the interests of retrenchment and economy throughout. May their example be followed by the cities and by the nation.

A BIT OF MEDICAL HISTORY

THE FALLOW CENTURIES

The period from the death of Galen to the beginning of the thirteenth century from the point of view of achievement in western European medicine is the briefest epoch in medical history. There are a number of very plausible explanations of this fact. The so-called Dark Ages, however, are not easy to understand, for obvious reasons. It is difficult for modern man to project himself back to a time when the things which make for modernity did not exist. "Built up on the ruins of an ancient system," says Marvin,* "and full of new life seeking fresh forms and outlets for its vigour, the mediæval system impresses us at first more perhaps by its wealth of contradictions than by any one of the special features which have led them to call it, sometimes the 'age of faith,' sometimes the 'dark ages,' sometimes the 'age of chivalry,' sometimes the 'age of law.' It exhibits elements which justify them all, kings celebrated for their services to learning who had never learnt to write, orgies of savage cruelty in the interests of the purest of religions, loose lives and ecstatic aspirations, rough hands and meticulous theory." What we understand today as mediævalism was fostered by the reaction of Christian life, which looked upon Greek literature, philosophy and science as pagan. There was an effort to destroy everything emanating from pagan countries, which did not cease until 1564. Greek culture had been always more or less distinct from Greek religion so that it developed practically unhindered until Greece was finally absorbed by Rome.

The beginning of the Dark Ages, as well as the dawn of early modern times, was not marked by any definite dates. The transition from Greek learning to mediævalism was gradual, as was also the emergence from darkness in the thirteenth and fourteenth centuries.

* * *

*The Living Past. F. S. Marvin.

The downfall of Rome left Europe practically nationless. The continent was at the mercy of barbarians, organized, if such it may be called, into loose tribal groups. The greatest need of humanity was for spiritual uplift* rather than for intellectual advancement. The invasions of the Goths and Vandals were due largely to the fact that they themselves were driven by the Tartar tribes from the north into Italy and Greece and other parts of southern Europe in successive waves which continued from 250 to 450 A. D. and sporadically for several centuries later. The invasion of the Goths destroyed the culture of southern Europe that had taken several centuries to develop. The social condition therefore was ripe for the Christian church with its ritual and attractive symbolism. During the first century or so of the Christian era there was a struggle for supremacy at Rome between Christianity and Mithraism† but eventually the Christian movement triumphed. The period of history which we are considering embraced the age of the crusades; it was likewise the age of chivalry; it was also a time when hermits betook themselves to the solitary places of the earth and founded monasteries.

Rome's influence upon civilization consisted in carrying law and order with her, and in the promotion of public works. She excelled in military organization, in colonization and government. The Roman was a material civilization. Rome inherited Greek scientific and philosophic learning but was incapable of fostering it and of passing on the torch. Medicine in Rome was not undertaken by the best minds. As noted, Galen died in the year 200 A. D. He was followed by nothing but compilers and quacks, for little original work in medicine was accomplished. Only a few names stand out and these constitute the Byzantine school. Oribasius, physician to the Emperor Julian the Apostate, was the last medical writer of importance in the ancient world. His work consisted of a collection of medical writings comprising seventy-two books, the value of which consisted in their being largely quotations from the works of

earlier writers, thereby rescuing the works of the earlier writers which might otherwise have been lost to posterity. Paulus Ægineta (625-690) or Paul of Ægina, in 660, produced a volume, an epitome of medicine, wholly wanting in originality, consisting as it did of quotations from Oribasius and Galen. He declared that the ancients had written all there was to know about medicine and that he was simply their humble scribe. Other Byzantine physicians were: Aëtius, who compiled a work to which must be credited what is known about Rufus of Ephesus and of Leonides in surgery and of Soranus in gynecology, and Alexander of Tralles (525-605), the only one of the Byzantine compilers, according to Garrison, who displayed any originality. The three representatives of early Byzantine medicine it will be seen produced works of a high historico-literary value since they filled in the gaps with their translation and compilation where the original writings had been lost.

* * *

In the east medicine was carried on through the Byzantine period (576-732 A.D.) and the Mohammedan and Jewish periods (732-1096 A.D.). The word *carried* is used advisedly inasmuch as little or nothing of value was added to the legacy of the Greek tradition, particularly during the first epoch. "Degeneration of mind and body with consequent relaxation of morals," writes Garrison,* "led to mysticism and the respect for the authority of magic and the supernatural which was to pave the way for the bigotry, dogmatism and mental inertia of the middle ages." Sir Clifford Allbutt referring to the Byzantine period says that "the chief movements of learning were started in Byzantium until western Europe was fit to take care of them."

Greek medicine had become transmitted to the east through Syria which during the rule of the Seleucidæ had become thoroughly under Greek influence. The Christian church had aided the expansion of Greek culture eastward during the third century through its missionary activity in founding schools in Mesopotamia; important to the work in hand was that of the church founded at Edessa. Much scholarship prevailed in all branches of learning of the time including theology and medicine. The

*As a means of shedding light on the mental and spiritual life of Europe during the Dark and Middle Ages, Lecky's *History of European Morals* is invaluable. It is a scholarly work of most fascinating interest to the lover of history, whether medical or social.

†Mithraism was a cult in ancient Rome closely resembling Christianity in its mysteries and sacraments. It was the prevailing religion among the Roman legionaries who carried it throughout the Empire. Mithraism was the most serious rival of Christianity during the later years of paganism.

**History of Medicine.* Garrison, page 121.

most eminent translator was Sergius, a presbyter and physician, who translated during the first half of the sixth century the works of Hippocrates and Galen into the Syrian vernacular. The Nestorian sect of which Sergius was a distinguished member were the heretics of the time and soon meet with the brand of argument that the orthodoxy is wont to use with its opponents. They were banished from the Byzantine Empire into Persia. The Nestorians about the end of the fifth century A.D. founded a school for medical training along with their church school at Jondisabur. The Nestorian school persisted until the Persians came under Mohammedan rule. To this school is ascribed the impetus which was to lead to the rapid development of Arabian medicine. Near the end of the sixth century A.D. the outlook for medicine was rather dark not only in Byzantium but also in Rome and Italy. But it was the darkness that was to precede the dawn. The great Arab Renaissance was to follow in the wake of Byzantine medicine.

* * *

We have been accustomed from our early historical study to withhold the benefit of the doubt from the Arabs. Creasy* has taught us to look upon the battle of Tours of the early eighth century in which Charles Martel defeated the Saracens, as "one of the fifteen decisive battles of the world," in which this defeat meant the greater freedom of the race in Europe. And again in the eleventh and twelfth centuries the crusades were carried on in a vigorous attempt to rescue the tomb of the Saviour from despoliation at the hands of the Saracens. Sir Walter Scott in his novel, *The Talisman*, has also presented us with fixed ideas unfavorable to this semitic race. Much, however, has been accomplished in the way of research that will have the effect of placing Arabia in a different and probably in a better light so far as impartial observers are concerned. It now appears possible that Arabian culture had a great deal to do with the awakening known as the Renaissance which had its beginning in Italy. The ancient University of Salerno as well as that of Padua drew very largely from Arab culture which had become implanted about the

* * *

Mediterranean from the seventh century onward until about the twelfth century.

The chief service rendered medicine by the Mohammedans consisted not only in preserving Greek culture pretty much as the physicians mentioned of the Byzantine school had done, but in their activity in other realms of thought. With them originated algebra, chemistry or alchemy, and geology; the numerals as we now use them; to them must be accredited the introduction of such necessities and conveniences as street lamps, window panes, fireworks, stringed instruments, perfumes and spices. To Islam, also, the monotheism of Galen and of Aristotle had a strong appeal. The medical writers of this period have been designated "Arabic" in as much as the Arabic language was their medium of expression. Many of the writers, however, were Persian or Spanish or Jewish by birth. The work of Sergius the Nestorian was revised, but, not content with this, Arab scholars of the ninth century undertook the task of producing extensive translations into Arabic of much of the classical Greek literature. During this century Arab control extended from India to Spain. The medical writings of the Arabian period were derived directly from Greece. Under the encouragement of the eastern rulers, the collection and copying of Greek manuscripts was undertaken so that we have the works of Hippocrates, Galen, Dioscorides as well as others turned into Arabic. This work of translating and compiling was pursued largely at Bagdad. Among the greatest physicians of the Eastern Caliphate were three Persians, namely, Rhazes (860-930 A.D.), Haly ben Abbas, who lived in the latter part of the tenth century, and Avicenna (980-1037). Rhazes was a great clinician, the first to describe smallpox, measles, or disease entities. The work of Abbas consisted of the "Royal Book," a treatise on medicine. The anatomical section of this work formed the entire source of knowledge of the subject at Salerno for a hundred years (1070-1170). Avicenna, a physician, wrote on geology and has been called "father" of this science. He is said to have been the first to describe the properties of sulphuric acid and of alcohol as well as to give directions for their manufacture. His importance in medical history consisted in his endeavor to produce a synthesis of the medical knowledge of his day,

*The Fifteen Decisive Battles of the World. E. S. Creasy.

at the same time correlating it with the work of Galen and Aristotle.

Among the Jewish physicians of this period was Isaac Judæus (855-955), who wrote a book on Uroscopy and another on Dietetics. Moses Maimonides (1135-1204), another Jewish physician, wrote a treatise on personal hygiene. He was born at Cordova, Spain. Other physicians of the Western Caliphate were Avenzoar and his pupil Averroes; both lived at Cordova during the twelfth century. Averroes was a philosopher and free thinker as well as physician.

* * *

We have followed Greek learning through its circuitous route about the Mediterranean to Spain and to Italy. Let us see what was happening during these centuries in the rest of Europe.

During the Middle Ages there was almost universal illiteracy. According to Coulton, a learned medieval scholar, "All medical thought is characterized, nominally at least, by the conviction that each man has a soul to save and that therefore salvation is the main end of every human being." "Although in their practise the monks as part of their rule of charity relieved the sick and thereby played the role of physician, they were in general forbidden to do so. 'To buy drugs, to consult physicians, to take medicine befits not religion,' they must not use earthly remedies at the risk of salvation. Many of the legends of the saints present the same idea of the incompatibility of religious virtue and the treatment of disease by any means but prayer."—Stubbs and Bligh.

* * *

According to Singer, Anglo-Saxon Leechdoms of the twelfth century and earlier provide us with the best account of the practise of medicine during the Dark Ages. These manuscripts are christianized versions of Latin originals badly translated, from the *herbarium* of Apuleus Barbarus. We discern in them persistence of primitive folklore in magic and medicine. The Saxon ideas persisted into the thirteenth century uninfluenced by the Norman invasion in the eleventh.

In this connection it is interesting to recall the mental equipment of Chaucer's Doctor of Physic, who was one of the merry company who gathered at Tabard Inn on the pilgrimage to Canterbury. The poet in his

Prologue to the Canterbury Tales presents a portrait of the doctor of the twelfth and thirteenth centuries, who was a man of good general education yet skilled in the magic of the time. Reference is made to his acquaintance with Æsculapius, Dioscorides, and Rufus, the early physician of Ephesus. His doctor of physic also showed a familiarity with the works of olde Ypocras (Hippocrates), Haley, an Arabian commentator on Galen of the eleventh century, and with Serapion and Avicenna. The physicians of the Arabian school evidently exerted a strong indirect influence over Chaucer's savant. However, up to his time only two English doctors were worthy of mention, John Gatesden, a court physician the first half of the fourteenth century, and Gilbertyn (Gilbertus Angelicus), who wrote about 1250. Chaucer's description in his quaint English runs as follows:

With us there was a DOCTOUR OF PHISIK;
In all this world ne was ther noon hym lik,
To speke of phisik and of surgerye;
For he was grounded in astronomye.
He kepte his pacient a ful greet deel
In houres, by his magyk natureel,
Wel koude he fortunen the ascendent
Of his ymages for his pacient.
He knew the cause of everich maladye,
Were it of hoot, or cold, of moyste, or drye,
And where they engendred and of what humour;
He was verray parfit praktisour.
The cause y-knowe and of his harm the roote,
Anon he yaf the sike man his boote.
Ful redy hadde he his apothecaries
To sende him drogges and his letuaries,
For ech of hem made oother for to wynne,
Hir frendshipe nas nat newe to bigynne.
Wel knew he the olde Esculapius
And Deyscorides, and eek Rufus,
Olde Ypocras, Haly and Galyen,
Serapion, Rasis and Avycen,
Averrois, Damascien and Constantyn,
Bernard and Gatesden and Gilbertyn.
Of his diete mesurable was he,
For it was of no superfluitee,
But of greet norissyng and digestible.
His studies was but litel on the Bible.

The mention of Gilbert and John makes it of interest to go into some detail in regard to English medicine following the Norman conquest. Gilbert was the scholarly type and John of Gaddesden the fashionable doctor. Regarding native medicine as already mentioned, much of it was fantastic, a system of charms connected with ancient tribal customs. "By the end of the ninth century, it may be said that English medicine had become a blend of four separate streams—legendary versions of Hippocrates and Galen, derived at second hand from their Græco-Latin successors; a consider-

able infusion from the same source of Mediterranean and oriental magic discreetly tintured with Christianity but unchanged in essence; a native contribution of the same kind, similarly christianized; and a perhaps more trustworthy botanical lore, both indigenous and imported."*

* * *

The chief practitioners were the higher monastic clergy. There was also an inferior order according to the Venerable Bede, called *medici* or leeches, who performed most of the surgical operations. In addition to these were the herbalists. The Anglo-Saxon Leech Book of the physician Bald compared very favorably with any work of its kind anywhere on the continent. It was the earliest medical work of Great Britain, appearing shortly after the death of Alfred the Great. The Leech Book contains many examples of charms such as the wearing of amulets; the saying of prayers in connection with certain herbs; the uttering of unintelligible formulæ. For example, "If wens pain a man in the heart," the Leech Books advise, "let a maiden go to a spring, which runs due east, and ladle up a cupful, moving the cup with the stream, and sing over it the creed and Pater Noster, and then pour it into another vessel and ladle up some more so as to have these cups full. Do for nine days; soon it will be well with the man." For flying venom and every venomous swelling the following is recommended: "On a Friday churn butter which has been milked from a neat or hind all of one color; and let it not be mingled with water. Sing over it nine times a litany and nine times a Pater Noster." No great masters in Anglo-Saxon medicine were evolved, which was equally true of other western European countries.

Gilbert was born in 1166, just one hundred years after the Battle of Hastings. He was the first Englishman to achieve a continental reputation. He knew enough French to get along with, and also the rudiments of Latin. His medical training was obtained at Salerno, which, according to tradition, was founded by Charlemagne in 802 though it was not until several centuries later that it achieved the height of its fame. Gilbert's chief work was his *Compendium* or *Laurea Medicinæ*. It was printed at

Lyons in 1510 and at Geneva in 1608. Its contents consisted of seven chapters, namely fevers, diseases of the head and nerves; diseases of the eye, face and ears; respiratory complaints and affections of the external members; diseases of the intestines; diseases of the liver, spleen and kidneys; diseases of the generative system. There are sections on cancer, gout, skin diseases and poisons. It was an early handbook on practice of medicine. Gilbert was the first to recognize the contagious nature of smallpox. He also maintained that the only treatment of cancer was surgical. He showed the influence, which he did not always credit, of the Arabian school of medicine. Gilbert died in the year 1230.

As for Chaucer's other physician, John of Gaddesden, he is described as "Very artful in laying baits for the delicate, for the ladies, for the right; for the former he has such a tenderness that he condescends to instruct them even in perfumes and washes; especially some to dye their hair; and such a respect for the latter that he is always studying to invent some of the most select and dearest medicine for them; and if there is a very good thing indeed, he orders twice the quantity for them as he does for the poor."*

John had an eye to the emoluments of his profession. To his fellow practitioners he tells how he cured twenty cases of dropsy by the use of spikenard but warns him to obtain their fee in advance. He describes a number of disagreeable ailments which a doctor can seldom make any money by their treatment. He was doubtless the kind of physician Chaucer had in mind,

"For gold in phisik is a cordial
Therefore he lovede gold in special."

The description of Anglo-Saxon and early Norman medicine would apply elsewhere in Europe during the same long period before the dawn.

GEORGE CRABBE—THE POET

(BRITISH MEDICAL JOURNAL)

So few people now remember George Crabbe, who died on February 3, 1832, that it is necessary to add "the poet" to identify him. Yet he has an interest for medical men because he began life as a doctor, with experience of Poor Law practice at its lowest, wrote poetry when he was himself as poor as a church mouse, and ended as a well-paid pluralist in the Church of England. The approaching centenary of his death has led to a reperusal of *The Village*

*The Harley Street Calendar. By H. H. Bashford. London Constable & Co., Ltd.

*Quoted from the Harley Street Calendar. H. H. Bashford.

and Tales of the Hall, and it is worth while, therefore, to recall his early struggles as a medical man. Born at Aldeburgh in Suffolk on December 24, 1754, he was the eldest of the six children of George Crabbe, schoolmaster, parish clerk, and collector of salt duties. George received some education at a school in Bungay, and was bound apprentice in 1768 to a doctor at Wickham Brook, near Bury St. Edmunds, who employed him as errand boy and farm laborer. Three years later, in 1771, he was transferred to Mr. Page, a surgeon at Woodbridge. There he met Sarah Elmy, the niece of a substantial yeoman at Parham, whom he married in 1783. Still poverty-stricken, he returned to Aldeburgh in 1775, and worked in a warehouse, publishing in the meantime a didactic poem in the style of Pope, called *Inebriety*, and working steadily as circumstances allowed at medicine and surgery. He obtained sufficient money to take him to London, where he appears to have "walked the hospitals" for a short time, but what hospitals is not known. He then returned to Aldeburgh, put a few bottles in a shop window with a small collection of herbs and drugs on the shelves, and started as an apothecary. The venture proved unsuccessful, and after two years he discontinued it, shut up shop, and determined to cultivate literature. For this purpose he borrowed five pounds, and after paying his debts sailed to London with a box of surgical instruments, three pounds in cash, and some manuscripts. Things went ill with him for eight months, but early in 1781 Burke came to his assistance, and from that time forward he went from good to better. Acting on Burke's advice he abandoned medicine and was ordained as curate to the Rector of Aldeburgh on December 21, 1781. Two years later Lord Thurlow described him as being "as like Parson Adams as twelve to the dozen," and gave him a couple of small livings in Dorsetshire, transferring him six years later to those of Muston and Allington in the Vale of Belvoir. He was subsequently transferred to the rectory of Trowbridge in Wiltshire, where he died. Crabbe's recollections of medicine as he knew it were not flattering. He describes the village practitioner as:

"A potent quack long versed in human ills,
Who first insults the victim whom he kills;
Whose murderous hand a drowsy bench protect,
And whose most tender mercy is neglect.
Paid by the parish for attendance here,
He wears contempt upon his sapient sneer;
In haste he seeks the bed where misery lies,
Impatience marked in his averted eyes,
And, some habitual queries hurried o'er,
Without reply, he rushes to the door."

EXCESSIVE EATING AND EXERCISE

New England Journal of Medicine

The United States Public Health Service has made public its advice with reference to eating and exercise, paying especial attention to the fact that too little or too much eating or exercise is detrimental to a marked degree.

It is especially emphasized in this statement that proper food must be taken to provide material for growth and repair and to furnish heat and energy for the body. The condition of the circulatory system is of great importance in augmenting the benefits of proper food and exercise. So far as exercise is concerned, it is becoming recognized that arteriosclerosis may be promoted by overexercise quite as much as by irregularities of eating. In a few words it may be said that the arteries are the registry of our indulgences, or of any other form of physical dissipation.

THE APPLE VS. THE DOCTOR

A New York scientist is reported as having discovered a way of putting a real "blush" to otherwise pallid apples and peaches by exposing the fruit to the infra-red rays. This bit of scientific information has called for the following from the Manchester Guardian poet.

Dear me, how the scope of such dodges and dope
Is daily drawn out and extended,
When a dish of dessert has to put on a spurt
If it wants its appearance commended!

Why, even the peach cannot nowadays reach
Perfection without a cosmetic!
And that blush that you seek on the apple's smooth
cheek,
Is it lent by the sun, or synthetic?

You might as well know that the sought-after glow
Is probably due to long study—
Through some radiant ramp with an up-to-date lamp
That apple grew rosy and ruddy.

But when apples grow ripe by a trick of that type,
Is it certain they comfort and nourish?
Are the vitamins there as they formerly were?
Do the proteins and calories flourish?

By fruit of this kind with a duly doped rind
Can health be protected and proctored—
Will an apple a day keep the doctor away
When the apple itself has been doctored?

MEN MADE OVER

Weel, we've just foond oot that th' Seven Wonders o' th' worl' hae noo dwindled awa back intil insignificance, alangside o' th' thing that a maun has been promising tae do in medicine.

We noo hae a quack Dōctor wha is guarantin' tae mak' over th' morons, an' th' illiterates, an' th' insane an' th' feeble minded, an' th' ignorant, an' ithers o' this kind wha we find a' o'er this bonnie country.

Mon! bit he's ga'en tae dae a lot o' things. He wull empty a' th' insane asylums, an' a' th' institutions for th' feeble minded, an' tak' a' th' folk wha are anly children in their mental ability an' mak' them brilliant students o' science, an' keep a' th' auld people frae growin' auld, an' mak' a' th' bairns smart in their lessons, an' gi' us a' poower like oor auld frien' Goliath.

We'll hae a' th' asylums for hotels an' boardin' hooses an' places tae entertain oor frien's an' a' th' institutions can be turned intil factories tae mak' story books, an' wheelbarrows or some sic thing. We'll nae require mony scuill maums, for oor bairns wull a' be sae smart the'll nae need much teachin' an' we'll a' hae min's the' like o' which ye've ne'er heard o' afore.

He's ga'en tae dae a' these wonders by feedin' us sheeps glan's or some sic thing. Mon! bit want that be a graund thing for th' fairmer wha raises sheep, except that it wull nae provide a market for th' wool? Ye ken wi' nae woolly min's in th' country we micht nae hae ony use for woolly claes an' besides oor lassies are nae wearin' flannel th' noo (not that we can notice ony way), an' we hae even politicians wha are gettin' alang wi'oot flannel next tae their skin. Ah think ah'll hae tae hae a cōversation wi' this maun an' find oot if it widna be better tae hae th' folk wear flannel whiles their takin' th' medicine. Ye ken, it wid be better for th' fair-

mer. O' course we hae a lot o' wolves th' noo wha are paradin' in sheep's clothin'. They think it gies them mair poower an' pep. But that's nae enough wool tae help the fairmer.

Weel, ah'm wonderin' like, why some o' we chaps didna think o' this thing afore. Its sic a wonderfu' scheme. Just a few drōps o' sheep's glan's or some sic thing an' lo an' behold, presto change, moocha poocha, an' we're instanly changed. (Nae, nae, ah'm ahead o' ma story.) Instantly widna do, we hae tae buy th' medicine for months an' months, then, if we're nae a hard case, we become smart people, wi' th' wisdom o' oor auld frien' Solomon.

Weel, there's only wan thing th' matter wi' this quack dōctor, an' his wonderfu' scientific discovery. First, he's nae a dōctor at a', an' it's nae a scientific discovery, an' he's been in jail, an' he's nae got a post office address th' noo, an' last bit not least, oor Uncle Sam dosna like him verra weel. Ye ken, Uncle Sam dosna like ony body wha tells lies in a letter an' tries tae get money oot o' people they dinna ken, or promise them something they canna gi', or tae promise tae gi' them something they haena got. That's what they ca' usin' the' mails tae defraud, an' Uncle Sam wull nae stan' for it. Uncle Sam is usually a fine auld cultivated gentleman o' th' auld scuil, but when he gets his dander oop wi' some one wha's foolin' th' public, an' usin' his post office tae do it wi',—Weel, he just sends them doon tae ane o' his boardin' hooses for a while an' that's what happened tae this maun.

Of course ah's nae sae anxious aboot oor feeble minded or oor morons. We hae a lot o' honest Dōctors wha are workin' wi' these people, an' doin' a ground work. An we'er nae sae anxious aboot oor bairns wha are nae doin' weel at scuil. A lot o' guid milk an' porridge wull tak' fine care o' them, but mon! if some maun wid come alang th' road wi' a scheme tae mak' o'er oor pōliticians an' book agents, we would gi' him a life's job, at guid wages.

There's a lot o' things we wid hae a maun of this kin' do. We wid like fine tae hae him mak' over a' oor pōliticians' min's sae they wid hae a min' o' their ain, ance an' awhile. We wid like, too, if he wid mak' over th' features o' some o' them. Ye ken th' chief ōbject o' some o' oor pōliticians is tae hae their pictures pit intil th' mornin' papers, an' we wid like tae hae guid lookin' anes. The democrats ye ken are verra prood o' their appearance. When we gi' a welcom' tae a delegation o' ladies, we wid like tae hae a guid lookin' maun tae gi' th' talk an' sit aside o' them when ther haein' their photograph maun snap his kodak.

We wid be sure tae send him doon tae Chicago this June. He wid hae an a'fu' lot o' work then. He wid hae tae work nicht an' day. Perhaps some nicht he micht fin' a dark horse tae lead oor political parties oot o' their depression an' mak' th' country eternally indebted and gratified tae him.

Ah weel. There's a lot mair people we wid hae made over if we could, like those wha hang roon' oor cooncil chambers an' legislative ha's, but as lang as this maun's scheme is a fraud, an' naething o' this kin' is a success, we maun get alang just as we are, an' mak' the' best o' it, bit min' ye, ah'm tellin' ye, feed th' bairns plenty o' porridge an' vote for a' guid he men. Aye, an' dinna forget oor Wm. Cullen Bryant—wha tauld us tae "so live that when thy summons comes tae join the innumerable caravan that moves tae that mysterious realm where each shall tak' his chamber in th' silent ha's o' death, thou gae not as the quarrie slave, scourged tae his dungeon, bit, renewed and strengthened by an' unfaltering trust, approach thy grave as one who wraps his plaidie aboot him, an's lies doon tae pleasant dreams.

Ah weel, Guid Nicht.

—WEELUM.

HEALTH IN HEAT WAVES

In summer when the days are warm
Your habits, Sinner, need reform.
'Tis best to bow before the storm.

Consult the pundits of the press;
Be guided by their views—unless
You wish to suffer much distress.

Do you desire to drink? Then first
Of all restrain that lust accurst,
For drinking but increases thirst.

Do you desire to eat? Refrain,
For eating throws a hideous strain
Upon the liver, heart, and brain.

Would you recline upon your bed?
Oh! pause and stay awake instead,
For slumber is a thing to dread.

Do you desire to stay at home
And read some sage and tranquil tome?
Then stir yourself; get out and roam.

But do not walk with hasty stride,
And do not run and do not ride,
For exercise is suicide.

Do you perspire? How very sad;
It is not good for you, my lad,
You don't perspire? Dear me, that's bad!

Do you like walking? Learn to swim.
Are you a swimmer? Change your whim,
And walk to keep yourself in trim.

In short, the Heat Wave Rule for you
Is—Anything you want to do
Is bad and ought to be taboo.

Ponder this rule and walk with fear,
And, when you've got the whole thing clear,
Doubtless the winter will be here.

Its presence you need not deplore;
These maxims you may then ignore
And carry on as heretofore.

Manchester Guardian.

DUCTLESS GLANDS AS THEY APPERTAIN TO EYE DISEASES AND TO SURGERY

As conclusions to his article, A. D. Ruedemann, Cleveland, enumerates the following noteworthy facts: 1. Frequently it is found that patients who are examined for glasses have a muscle imbalance which may be due to hypothyroidism or other glandular dysfunction. 2. Hyperthyroidism produces definite eye changes, which in most cases are benefited by surgery; namely, wide fissures, ulcers and exophthalmos. Associated muscle changes are little benefited by any treatment, medical or surgical. 3. In parathyroid tetany, lens changes are sometimes present, probably the result of a combination of spasm with a deficiency of calcium and phosphorus. 4. Dysfunction of the pituitary gland is a causative factor in certain retinal disturbances and is an associated factor in other eye changes probably of polyglandular origin. 5. The recent work of Dr. Chile also brings out a group of cases in which suparenal dysfunction is associated with eye changes. —*Journal A. M. A.*

MEDICAL ECONOMICS

CAN WE AFFORD STATE MEDICINE?

J. G. R. MANWARING, M.D.
FLINT, MICHIGAN

PART V

MEDICINE AND BUSINESS

"Put baldly, the view is that business is something outside of morality, a department of life in which the ordinary rules of morality have no validity."—Clay-Agger, Economics, page 639.

"It seems inherent in human nature that wherever the God is Gold, the Devil is the metallurgist. The symbol of our God is the dollar sign, and a bank account is the proof that our prayers have been answered. Wealth can commit no wrong and a rich life is measured in riches. The real sin is poverty, the height of folly is work. The one word 'success' sums up the rite, ritual and creed of the national religion."—Dorsey, Man's Own Show, Civilization, page 852.

Last fall at a meeting in New York City, the President of our largest surgical society advocated that physicians should adopt certain business practices such as some methods of advertising and practicing by groups after the manner of business.

Last winter a former advocate of State Medicine stood up in a Chicago meeting and advocated that the practice of medicine be reorganized along the lines of big business even to the point of having business men do the reorganizing if necessary.

Scheffel states that the public wants corporate medicine and advises physicians to give it to them.¹

Apparently this plan appeals to many men, including some physicians, and it is put forward as a substitute for state medicine or possibly to ward it off.

Those who are dissatisfied with the present practice of medicine ridicule medical ethics and practices and laud business methods as much superior. Now is a good time to review the ethics and practices of business before we think of accepting them for our own.

The business treatment of workers has been a long history of exploitation and oppression. This mistreatment dates from the time of slavery in those countries emerging from savagery, through the stage of serfdom to peonage by means of contract labor still common in backward places, and it prevailed right up into the "machine age," which early only intensified the wretchedness thrust upon employees. Their condition has been ameliorated a great deal by the influence of organized labor, with its exposés and reform laws.

We recall the English miners with their hovels, filth, ignorance and their child workers living underground and described as mere animals. A similar scandalous condition was found in English mills and in many of our own mills situated in the Atlantic States. Peonage by means of contracts and well regulated debts to company stores was developed in our own country in small towns with large mines. We recall the unrestricted importation

of cheap foreign laborers for the sake of reducing to a lower level the minimum wage and this irrespective of what evils such laborers brought to this country.

We recall the terrible toll of industrial accidents with the unnecessary maiming and killing of many thousands, also the constant legal fights to save the industries from paying more than they absolutely had to when caused to bear the burden of their injured. After this burden was placed upon industry by compensation laws, how quickly it reduced the cost of injuries by safety measures in order to save money rather than primarily to save men! And now we are reminded that today surgical care for injured employees is apt to be obtained more according to its cheapness than its quality.

We recall the fighting of all efforts of labor to organize and put itself in a position to deal more nearly on an equal footing with employers. This fight is perennial.

We also recall the tyranny of labor unions. The limitation of apprentices, the limitation of output to a maximum regardless of productive ability, the multitude of exacting and often apparently unreasonable rules, and always the demand for the maximum wage which was regulated by the effectiveness of force rather than by a careful analysis of conditions. We recall the frequent resort to violence with destruction of property and life. Terrorism has been a frequent weapon in labor's hands. Labor occupies a poorer strategic position and hence has not been so efficient in its control as management.

Business has not always been kind to customers. There is a principle in law that says the buyer must look out for himself. If he makes a bad bargain he must abide by it: (Caveat Emptor—let the buyer beware.) This opens the way for all kinds of sharp practices. We only have to note the untruthful advertising so prevalent everywhere. It ranges from mere exaggeration to downright lying. Testimonials are much used which may be faked, frequently are bought and usually have no merit at all.² The medical field has been a very fertile field for this kind of advertising, with fake cancer cures, worthless medicines, and medicines sold at exorbitant prices regardless of worth. The exploitation of the incurables by exchanging false hopes for good money has been a very lucrative business, despicable as it is. Business winks at it and only organized medicine has fought it constantly. Our pure food laws generally were opposed by business and our national pure food and drug act was likewise opposed and later weakened by modifications after being put into operation. Milk producers fought sanitary regulations which were put over in spite of them and have saved thousands of lives. Only a few months ago many dairymen of Iowa so objected to having their cattle tested for tuberculosis that troops had to be used to guard the testers. They apparently did not consider the children that infected milk might maim or destroy. Only a few years ago a number of packing houses sold regularly diseased meats and objected to inspection and regulation. Public eating places have had to be inspected and controlled to insure ordinary cleanliness. Business generally sells without regard to any other factors than safeguarding the payments for its wares. It has developed "high pressure" methods of selling regardless of needs or wants and, in our late orgy, beyond the ability of buyers to pay all for which they contracted.

Business persistently tries to embarrass competitors by underselling and ruining, by buying another's source of supplies, by buying up chattel mortgages and foreclosing to put others out of the way. If some concern needs a piece of property for ex-

pansion it is considered good business for a rival or his agent to buy it and refuse to sell it or to sell only at an outrageous price.

The history of our panics and of Wall Street activities is one long recital of unbridled greed and the incidental ruining of thousands of men.³ Stock market squeezes which take advantage of someone's precarious needs are clever and approved methods of hurting others for personal gain.⁴

Business also takes advantage of the fact that it handles other people's money so that trusting stockholders, with whose money a business is started or built up, lose what should be theirs through manipulation of several companies, mergers, freeze-outs, fancy salaries to officers and recently through bonus systems carried out in a legal manner to the end that millions of dollars which belong to the stockholders, the employers, or the customers have been diverted to a relatively few officials.⁵

The relationship of business to the public generally is such as to give rise to an old saying that a corporation is without a soul. Most business men have little regard for the ethics of the professions. As a matter of fact, they seldom know what these ethics are, but usually condemn them for practices which have crept in in spite of ethical standards. Only too frequently these are borrowed from business, such as secret commissions in medicine.

Business objects to the passing and enforcement of laws regulating it. It resents all restrictions placed upon itself. It condemns any criticism expressed by outsiders, even when given by those who are well informed. The invention of the steam engine, electric dynamos and motors, the turbine water wheel and the gas engine gave us the foundation for this great industrial age. These inventions and the great development of industries rest directly on investigations and discoveries by scientific experts; yet in general business men mistrust the scientist and do not approve of him excepting those whom they have to employ in their own business. It seems to be one of the faults of our times that the scientific expert is largely discounted.

Business supports candidates for office because friendly to its interests and not particularly because of integrity or merit.

Business is very cocky about its abilities and invades other fields with confidence such as economics, philosophy, government, etc.

Business is very complacent toward fraudulent cults and shortcuts to caring for the sick where, if ever, ignorance should have no place.

Business has obtained by chicanery or worse, public properties like natural resources and enriched itself at the expense of the public. Michigan should well remember the timber stealing of its lumber days. Oil and minerals in public property are not safe.

In pioneering generally peonage and slavery were always forced on the natives found. It is to the glory of our American Indian that he could not be successfully enslaved. Many New England fortunes were founded on a substitute from Africa. The history of this traffic is a terrible example of what greed will stoop to and also a proof that money cannot be tainted.⁶

When the public is in deep trouble, such as happens in time of war, business takes advantage of the hurry and needs of the country to indulge in a most unholy profiteering. It has happened to us in every war from the wooden guns of the Revolution to the more recent times when we were sold decayed canned meats, shoddy uniforms, paper soled shoes, and, probably worst of all, tremendous amounts of unnecessary supplies.

Only recently the courts discharged a man who

gave a bribe—he was a business man—and sent to prison the man (Fall) who received it; he was a public official and expected to be honest.

If you are successful in your business ventures you are all right and a desirable member of society. Few questions are asked as to how the riches were obtained.

Business habitually buys its way with secret commissions. This seems to be a natural concomitant of spending some other person's money for them. Purchasing agents are prone to accept commissions. A great deal of "sales promotion" is done by agents who in one way or another discreetly pay commissions. It is a laudable shrewdness to do this in business but a crime when indulged in by physicians who "split fees."

Agents of all kinds are willing to pay a little something to another for his influence in helping to sell to a prospective buyer. And executives acting for their company sometimes so arrange it that they get a part of the purchase price the company pays for supplies.

Certain sayings typify business both big and little: "Caveat Emptor," "business is business," "we mean business," all mean the same and are employed alike by the attorney, the banker, the business man, the employer and the labor union official. "Economic necessity," "absolute economic law," mean that "business is business." "Possession is nine points of the law" means that "might is right" and accounts for the fact that we have America and that Japan has Manchuria.

These charges could be multiplied ad nauseam. When discussed with business men, they excuse them by saying that such acts are exceptional. They are selected and presented because they are not exceptional at all but give a very fair idea of the underlying ideals which actuate business. These are all legal practices and have nothing to do with illegal business like racketeering.

It all means that competition brings out the weaknesses there are in men as well as the good. It, too, illustrates the fact that we are really creatures of circumstances and cannot always direct our own efforts as we would like. Business men are a part of a gigantic system in which they are under constant pressure to make a good financial showing; all else is secondary and if they do not make money it means failure. The men themselves are just like all men, usually kind and considerate to those whom they know intimately, have ideals of a high type in other fields, often are ardent church supporters and attendants. As family men they are certainly as fine as any.

Business is impersonal and admits only property rights. Human rights have been forced on it through a long succession of regulatory laws which have changed it greatly for the better.

Self-preservation instincts are the foundations of business efforts. Once there was only jungle law. There was no sympathy, no kindness, no pity given to others than the immediate family. Might alone was right and everything was on a "business basis." As business left the primitive haunts of men it carried up with it its successful business ethics. From time to time ethical teachers arose to protest; such were Buddha, Confucius, and Jesus. So far as business goes, reform movements started by these leaders were polluted and perverted by the drive for possessions.

The most abject subjugation of human rights, but not the most cruel, is found in slavery, which grew out of the doctrine that might is right. As wealth accumulated, loot and plunder became the way to riches. Nearly all of our great explorers of a few hundred years ago were after wealth by looting.

"Come and get it" was the open suggestion of weak peoples. Private fortunes at this time were founded almost entirely on questionable and often heartless practices. Many of our best New England families were founded on wealth obtained in making rum and importing slaves, which they bought and sold.⁶

Jungle ethics reached their worst in Europe in medieval times. Since the Renaissance the ethics of business between man and man has improved immensely. This improvement is a matter of evolutionary changes which have accompanied the rise of popular government and the enforced recognition of human rights.

The Al Capones are throw-backs to medieval times when all were or tried to be similar and racketeering was the chosen way of life.

Regulation of labor conditions, compensation laws, pure food laws, sanitary regulations, meat inspection and regulation, interstate commerce regulations, restricted immigration laws, corporation laws and regulations, etc., have helped to improve conditions a great deal. Competition prevents such regulations coming from within. They have to be brought about by public demand and as times goes on are accepted more graciously by most business executives and are even welcomed by a few.

In international business relations it is still good statesmanship to cheat, to deceive, to plunder, to intimidate and even to kill and conquer as of old—when it pays.

We are rightly proud of our material advances in the past 5,000 years or so. They are of an order never experienced by man previously and this great advance in the comfort and satisfactions of life has been possible by two driving incentives without which we would still be in the animal state.

They are:

1. The competitive struggle to get ahead.
2. The obtaining of special rewards for special services.

These are the driving forces which are behind our rush of progress and hard business standards, yet we can hardly spare them.

Uncontrolled business is not good for us, but, with the evolving of regulatory laws, business practices have been greatly softened and as time goes on they will improve still more. A just and practicable law in time naturally comes to be accepted as a moral obligation and in business much of the injustice and harshness will disappear.

The comparatively recent phenomenal development of immense factory systems, great traffic facilities, mass production, accumulation of wealth, introduction of labor saving devices, facilities for entertainment, etc., which have so spectacularly revolutionized social conditions in the past century, has convinced the big business man that he has found the touchstone of sure success and he would apply his methods to all other endeavors. And the professions, viewing this development with open-eyed awe, have been tempted to try tentatively similar methods. We are advised to put government on a business basis, introduce more business into medicine, and even the fine arts are feeling this pressure of commercialism.

After all it is the long run that counts and business has yet to justify its supposedly superior methods.

The art of medicine, always dealing with intimate human troubles, has not developed so profound a regard for property values. It was founded on magic and superstition, indulged in fraud both consciously and unconsciously and was given to as mercenary methods as business was for many centuries. A few heroic figures rose above the rank and file but never controlled the latter's bad habits to any great degree.

With the rise of the sciences in the past two or three centuries the whole foundation of the art of medicine has been rebuilt on discovered truth which has killed the magic and superstition and with it the practices such traits engender.

With this change has gone a modification of the ethics of practice which are more and more suited to sick people and only secondarily are they influenced by business methods. Under the pressure of modern haste and example the practice of medicine has picked up some questionable business ways but fortunately so far they have not been made a part of its code of ethics and are not indulged in by the majority.

This review would seem to show that *the evolution of business while wonderful indeed has not progressed to that point where the sick and injured can afford to let themselves become grist for "big business" any more than they can afford to become subjects for the red tape and impersonal attention of state medicine. When the time comes that corporations become possessed of a soul and come to value human welfare and human lives above money, then and then only will it be safe for the public to let corporate medicine take care of those who are ill!*

REFERENCES

1. Scheffel, Carl: Medical Economics, March, 1932.
2. Chase and Schlink: Your Money's Worth.
3. Collman, Chas. A.: Our Mysterious Panics.
4. Warshaw, Chas. A.: The Story of Wall Street.
5. Flynn, John T.: Graft in Business, p. 192.
6. Taussig, C. W.: Rum, Romance and Rebellion.

COMMUNICATIONS

Petoskey, Michigan.
June 2, 1932.

Dr. F. C. Warnshuis.

Your letter with enclosure at hand regarding the Chicago doctor, and I will say that your reply to his letter was absolutely in accordance with the ideas of the members of the Northern Medical Society. To be able to make such a ruling stick would be the answer to our very earnest prayers.

I am glad that someone in authority has had the intestinal fortitude to stick up for us up here in the resort region. Let me assure you that we appreciate it very much. I shall bring the matter up at the next monthly meeting of our society and no doubt a resolution will be passed which will be mailed to the secretary of the State Board of Registration.

With kindest personal regards,

B. H. VANLEUVEN, M.D.,
Councilor, 13th District.

TREATMENT OF PERNICIOUS ANEMIA WITH HORSE LIVER EXTRACT: PRELIMINARY REPORT

Oscar Richter, Arthur E. Meyer and Andrew C. Ivy, Chicago, have prepared an extract of horse liver which is low in total solids (1.8 Gm. from 100 Gm. of raw liver) and of which an oral administration induces a complete remission in pernicious anemia. A preliminary study of the comparative concentration or potency of the antianemia principle or principles active in pernicious anemia present in horse and cattle liver suggests that the concentration may be greater in the liver of the horse.—*Journal A. M. A.*

GENERAL NEWS AND ANNOUNCEMENTS

Note the advertisements in this issue. Write for samples and literature.

Dr. and Mrs. Harrison S. Collisi and daughters, Jane and Barbara, sailed from New York for Europe on Tuesday, June 28.

Dr. Clark D. Brooks read a paper before The Toledo Academy of Medicine, Friday, May 27th, on Surgical Diseases of the Biliary Tract.

Note the dates for our annual meeting: Kalamazoo, September 13, 14 and 15. The House of Delegates convenes on Tuesday, September 13.

Honorary degrees were conferred on Dr. Hugo Erichsen, Dr. Charles G. Jennings and Mr. Malcolm Bingay at the annual commencement of the Detroit City College.

Mr. William J. Burns, LL.B., executive secretary of the Wayne County Medical Society, spoke before a joint meeting of the physicians and dentists of Akron, Ohio, on June 14.

Dr. W. T. Dodge, Big Rapids, retired from active practice, extends greetings to his professional friends. Physical infirmities confine him more or less to his home. He would be pleased to hear from his many friends.

Dr. G. Carl Huber, Professor of Anatomy and Dean of the graduate school of the University of Michigan, was honored by his students, friends and colleagues when a portrait in oil of himself was presented to the University.

On June 22 there was a joint meeting of the Washtenaw and Oakland County Medical Societies at Orchard Lake Country Club. The afternoon was spent at golf. Following the tournament dinner was served at the club house. Following the awarding of prizes Dr. Stevens, Headmaster of the Cranbrook School, spoke on "The Battle of Jutland."

The American Board of Ophthalmic Examinations will hold an examination in Montreal on Monday September 19, 1932. Necessary applications for this examination can be procured from the Secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, Illinois, and should be sent to him at least sixty days before the date of the examination.

Dr. Walter R. Parker, for twenty-seven years Professor of Ophthalmology of the University of Michigan Medical School, has retired and is to be succeeded by Dr. George Slocum who was for many years his assistant. The event of Dr. Parker's retirement was marked by a dinner in his honor tendered by his friends and colleagues on May 24.

Dr. H. R. Casgrain of Windsor, Ontario, died very suddenly at his home on June 16. Dr. or Col. Casgrain was a picturesque figure in medicine, well known to the older men in the medical profession of Wayne County. He was a graduate of the Detroit College of Medicine of the Class of 1879. Col.

Casgrain had rendered distinguished service in the World War, being stationed on the Island of Lemnos in the eastern Mediterranean Sea. He was borne to his grave on a gun carriage with full military honors.

The Alumni Clinics of the Detroit College of Medicine and Surgery were held June 15, 1932, when the following program was the order of the day at the Receiving Hospital: Cardio-Vascular Disease, Dr. R. L. Novy; Ward Rounds on Medicine, Drs. R. L. Novy, R. M. McKean, E. D. Spaulding, Douglas Donald, and S. G. Meyers; General Surgery, Dr. H. K. Shawan; Eye, Ear, Nose and Throat Surgery, Dr. J. M. Robb; Gynecological Surgery, Dr. H. W. Yates; Treatment of Heart Disease, Dr. F. N. Wilson; Clinical Pathological Conference, Dr. O. A. Brines; Electro-Cardiography, Dr. Walter Wilson; Tumors of Uterus and Mammary Gland; Kidney Pathology, James E. Davis. An Alumni dinner was held in the evening at the Book-Cadillac Hotel.

GOVERNOR BRUCKER ADDRESSED THE WAYNE COUNTY MEDICAL SOCIETY

On the evening of May 24th the Wayne County Medical Society had as their guest the Governor of the State. Following a dinner served at the Wayne County Medical Society club rooms, the meeting adjourned to the auditorium of the Maccabees Building, where the Governor addressed a capacity audience on the subject of State Affairs. Among other things the Governor commended the work of the legislature, inasmuch as they had limited themselves to only necessary legislation comprising some forty-two bills and that a concerted effort was made not only in the way of balancing the budget, but in reducing the cost of government to the minimum by, among other things, a reduction all around in salaries which had been effected very graciously by those affected.

Governor Brucker referred to the Lindbergh kidnapping and reaffirmed his stand on capital punishment as a means of disposing of first degree murderers. This statement brought applause, apparently the approval of the audience.

The officers of the Northern Tri-State Medical Association were guests at dinner of Dr. William Donald, Professor of Medicine in the Detroit College of Medicine and Surgery, June 6, 1932, at the Detroit Boat Club. The purpose of the meeting was to further the program and select speakers for the meeting in LaPorte, Indiana, the second Tuesday in April, 1933. Dr. J. Milton Robb, President of the Michigan State Medical Society for 1933, was an invited and honored guest. Speakers who have already been placed on the program are as follows: Dr. Henry A. Christian of Boston, Professor of Medicine in Harvard University; Dr. Russell M. Wilder, Professor of Medicine in Chicago University; Dr. Charles A. Elliott, Professor of Medicine in Northwestern University; Dr. Chas. Lukens of Toledo, Ohio, Past President of the Ohio State Medical Association; Dr. Frederick Collier, Professor of Surgery in the University of Michigan; Dr. Reed M. Nesbit, Professor of G. U. Surgery in the University of Michigan, and Dr. Leonard F. C. Wendt, of Detroit. About six more speakers will be added. The morning program will be given over to Clinics. The following officers who were present were: Dr. Edward B. Pedlow, President, Lima, Ohio; Dr. G. O. Larson, Vice-President, LaPorte, Ind.; Dr. Edward P. Gillette, Secretary, Toledo, Ohio; Dr. H. F. Randall, Treasurer, Flint, Michigan. Counsellors: Dr. Charles Lukens, Toledo, Ohio; Dr. Norris Gillette, Toledo, Ohio; and Dr. Jos. Andrius, Detroit, Mich.

OBITUARY

DR. LOUIS BARTH

Louis Barth, Grand Rapids, died at Blodgett Hospital on June 9th from heart disease complicating diabetes. Dr. Barth had been in active practice for some fifty years. He was a member of the Kent County Medical Society.

DR. HARRY BAUGUESS

Dr. Harry Bauguess died at his home on Mary Grove Avenue, Detroit, June 3rd, after an illness of two months. He was born in Illinois fifty-seven years ago. Dr. Bauguess received his medical education at the University of Nebraska, where he was graduated M.D. in 1899. He later returned to his alma mater, where he received the degree of B.S. in 1920 and B.A. in 1921. He was a student at the University of Minnesota under the Mayo Foundation from 1922 to 1924 pursuing work in pediatrics. He had also pursued post-graduate work in pediatrics in the University of Vienna. In 1924 he came to Detroit, where he was engaged in general practice with an office on Grand River Avenue until his last illness. He was a member of the Wayne County Medical Society, Michigan State Medical Society and American Medical Association. He is survived by his widow, Mrs. Ethel Bauguess, who is a member of the faculty of the Highland Park Intermediate School.

DR. CHARLES SUMNER MORLEY

Dr. Charles S. Morley died at his home in Holly on May 27 after an illness of one week.

He was born at Victor, Oswego County, New York, on January 18, 1855, the son of Rev. Butler Morley, a celebrated Baptist preacher. He began the study of medicine at the age of sixteen with Dr. Lyman Clary at Syracuse, New York, followed by instruction at the Cleveland Homeopathic Hospital College. He completed the course but did not receive his degree because of his minority. He began the practice of medicine at Vernon, Michigan, in 1874. In 1876, having reached his majority, he obtained his medical degree from the Cleveland Homeopathic Hospital College. In June, 1876, he removed to Pontiac, where he became associated in practice with Dr. Amos Walker.

He served as city physician of Pontiac for ten years. In 1887 he sold his practice to Dr. Aaron B. Avery and located at Richmond, Virginia, for a short time. He returned to Detroit the same year, continuing in practice there until 1924, when he returned to Oakland County. For many years he served on the surgical staff of Grace Hospital, Detroit, and other hospitals in that city. He was at one time a member of the Wayne County Medical Society, Michigan State Medical Society and the American Medical Association. He had been living at Holly for the past eight years.

DR. C. A. STEWART

Dr. Colin A. Stewart of Bay City, Michigan, died very suddenly in his office at the age of fifty-five years. The cause of death was pronounced heart disease. Dr. Stewart was born at Belmont, Ontario. He graduated from the high school in St. Thomas in 1896 and after teaching school for a year he entered the Detroit College of Medicine, where he was graduated M.D. in 1901. After a year's internship in Harper Hospital he located in Bay City, where he practised up to the time of his

death. Dr. Stewart was active in the interests of the Bay County Medical Society. In 1904 he married Miss Gertrude Baicher of Bay City, who survives him. He is also survived by a daughter, Mrs. Elaine G. Schultz, and a son, Colin R., both of Bay City.

DR. LEONARD F. C. WENDT

Dr. Leonard Wendt of Detroit died suddenly of heart disease. Dr. Wendt had suffered from coronary thrombosis, but after a few months' rest had been able to resume his practice for the past six months. He was born in Detroit fifty-six years ago. In 1902 he graduated from the old Detroit Homeopathic College. Dr. Wendt had been a member of the staff of Grace Hospital, Detroit, since his graduation. For a number of years he had emphasized diabetes and its treatment and had written extensively on the subject. He was a member of the Wayne County, Michigan State, and American Medical Associations. Dr. Wendt is survived by his wife, Mrs. Edith Reed Wendt, one brother and four sisters.

DR. JAMES E. ORR

Dr. James E. Orr, who for nearly twenty-five years practiced medicine in Detroit, died at his home June 14. He had been in ill health for two years as a result of an automobile accident. He was born in Wales, Michigan, seventy-five years ago and moved with his parents to Tilsonburg, Ontario, as a boy. He attended McGill University in Montreal and for a time taught there. In 1888 he was graduated in medicine from that University. Following his graduation he came to Detroit to practice medicine. He retired from active practice nearly twenty years ago. In 1894 he married Christiana Chuka, who died in 1923. One son, James Edgar Orr, with whom he lived, survives.

DR. H. D. ROBINSON

Dr. Humphrey D. Robinson, dean of the Manistee County Medical Society, died very suddenly at the age of 74 years, without any warning, at 8 A. M., on May 14th. Dr. Robinson was of the rapidly passing school of general practitioners and had served the people of Manistee since 1894. He was a graduate of the Detroit College of Medicine and Surgery on the unusual date of Feb. 29, 1884. He immediately began practice in the village of Free Soil, Mason County, Michigan, in July of 1884 and continued there for 10 years, moving to Manistee in 1894. He was Acting Assistant Surgeon for the U. S. Public Health Service at Manistee for a period of seventeen years, being retired four years ago. He was a member of the Masons, Knights Templar, and Knights of Pythias. He represented the Manistee County Medical Society as a delegate for a considerable period of years and will be remembered by a great many of the older practitioners throughout the state.

ANNUAL MEETING

KALAMAZOO

SEPTEMBER 13-14-15, 1932

An Unusual Scientific Program

SOCIETY ACTIVITY

THE MONTH'S COMMENT

The August Journal will be the Kalamazoo number. Watch for it. The annual meeting dates are September 13, 14 and 15. Note them on your engagement calendar.

Read the report of our A. M. A. delegates published in this issue. Every member should become a Fellow of the A. M. A. and so not only secure the Journal of the A. M. A. but also support the work that is being done for you by our national association. We would be in sore straits were it not for these national activities.

Public Relations Committees of County Societies are urged to be prompt in answering communications from the Committee on Survey of Medical Practice and Health Agencies. Every coöperation should be accorded.

The names of 237 were removed from the mailing list for failure to pay 1931 and 1932 dues. The names of those in arrears for 1932 dues will be removed July 1. See your county secretary and if short of funds he will arrange for deferred payment. One malpractice suit will cost you more than a lifetime of dues. Threats and suits are increasing in number and you may be the next defendant. Maintain your membership.

Advertisers make your Journal possible. Patronize them and give preference to those who utilize space in your Journal. Peruse each issue and respond by sending in requests for literature or samples. Let our advertisers know you appreciate their support.

Should you be threatened with a suit or suit be started *do not engage a local attorney*. Advise Medico-legal Committee promptly, withhold all comment and be guided by instructions that will be sent. The Society has a corps of experienced attorneys that are engaged for your defense.

This office welcomes your inquiries and is at your service. We invite you to call upon us whenever we can be of assistance or impart information.

Members of the medical profession who are interested in Roentgenology are invited to an exhibit to be held on July 12th at 8:15 P. M. at the Grace Hospital Auditorium, Detroit, to view the results of an intensive study of chest radiography which has been carried on at the Iola Sanitarium, Rochester, New York, by the General Electric Company.

DELEGATES REPORT

Michigan's delegates to the New Orleans A. M. A. annual meeting submit their report. Obviously they are unable to go into details on the wide field of work that our national organization is engaged in. Members are urged to read the annual reports as published in the *Journal of the A. M. A.*

THE HOUSE OF DELEGATES, MICHIGAN STATE MEDICAL SOCIETY

Your society was represented at the New Orleans Session by Delegates J. D. Brook, C. S. Gorsline, H. A. Luce, Carl F. Moll and Louis J. Hirschman.

The meeting place was the Tip Top Inn of the Hotel Roosevelt, which hotel was the headquarters for the officers and delegates. The arrangements for the meeting of the House of Delegates were very satisfactory and helped in some way to mitigate the warm and humid atmosphere of New Orleans.

The first order of business was the address of the Speaker of the House, our own Fredrick C. Warnshuis, who presided in his usual efficient and satisfactory manner. Several recommendations were made to facilitate the work of the House of Delegates and due deference was paid to the memory of Delegates J. O. Polak of New York, E. C. Thrash of Georgia, Donald McRae of Iowa, David Ross of Indiana and A. W. Hornbogen of Michigan, who had died during the past year.

The President, E. Starr Judd, stressed the responsibility of the members of the House of Delegates toward some of the civic and social functions for members of the medical profession. He stressed particularly the problem of personal service and advised a further study of the present conditions of medical practice in other countries, as was also recommended by resolution by our own state society. Contract practice was particularly dwelt upon and the tendency of the corporations to practise medicine was criticized. The practice of turning over portions of the practice of medicine to nurses, midwives and technicians was also criticized by Dr. Judd. He bespoke a better coöperation between the medical profession and those engaged in public health work.

He also discussed graduate training and the study of specialization in medicine and advised further investigation into qualification as to those holding themselves out as specialists.

He commended the work being done by the profession to secure the hospitalization of veterans in local private hospitals rather than the project being pushed by various veterans' organizations which would involve the expenditure of millions of dollars of money in the construction of special government hospitals for the care of veterans.

The address of President-elect Edward H. Cary covered many of the same points and he particularly commended the excellence of the various publications sponsored by the American Medical Association. Both speakers stressed the importance of more adequate housing for the activities of the A. M. A.

BOARD OF TRUSTEES

Considerable time was devoted to the reports of officers and Board of Trustees, the report of the secretary clarifying the differentiation between the Fellows and Members which seemed to be still somewhat hazy in the minds of some of the Fellows of the Association. He deprecated the so-called membership drives sponsored by some of the constituent state and county organizations, feeling that there was danger in the enthusiasm over increasing the membership of including undesirable practitioners of medicine. He also brought out situations exist-

ing in some states, as in the northern peninsula of our own state, of dual membership. He stated that there were men living in one state near the boundary line and practising in the other, who had memberships in county and state societies of both. It was felt that a member who chose to affiliate with a society other than that of his state of residence should secure a waiver from his own state society before becoming a member of the society of another state.

In the report of the Board of Trustees, it was brought out that the A. M. A. now has assumed the complete responsibility of publishing the Quarterly Cumulative Index Medicus. Also that the Bureau of Permanent Exhibits had expanded so rapidly that more space was necessary in the headquarters building to house this and other activities. The shrinkage in the securities owned by the Association in its reserve fund was considerable, but owing to unusually good selection of securities, the shrinkage was less than the average shrinkage in the portfolios of other similar organizations.

The report brought out the fact that there were nearly five million copies of the Journal printed in 1931 with an average weekly circulation of ninety-five thousand copies. The amount of reading material published in the Journal would make the equivalent in one year of fourteen average books or one-half the size of the Encyclopedia Britannica. The report showed that the circulation of Hygeia was steadily increasing and this journal showed a profit for the year, as did the American Medical Directory.

The Council on Pharmacy and Chemistry reported to the board that they were again cautioning the profession against the indiscriminating use of intravenous therapy, feeling that some practitioners have been misled by the enthusiastic efforts of drug manufacturers to popularize intravenous therapy. This Council, as well as the Council on Physiotherapy, is working unceasingly to separate the wheat from the chaff and the results of their labors are always at the service of the profession.

The Committee on Foods reported to the Board of Trustees that they passed on 331 food products of which 129 were accepted. They reported an increasingly sympathetic response from food manufacturers and a desire to cooperate with the work of the Council.

The Board reports that 205 five minute talks and 120 fifteen minute talks were given under association auspices over the radio during the past year. One hundred thirty-one thousand, five hundred fifty-nine pamphlets on health matters printed for non-medical readers were sold during the past year. The interest of the public in periodical health examination, health problems in education, health clubs for boys and girls were all further advanced during the past year. Cooperation with the congress of parents and teachers was also a part of the year's program.

The Board of Trustees report also disclosed that the Bureau of Investigation is still very active and the demand for pamphlets and posters on nostrums and quackeries showed a decided increase over 1930.

The Board also reported the work of the Bureau of Legal Medicine and Legislation with particular emphasis on the work opposing the Sheppard-Towner type of legislation and supporting legislation which would remove the restrictions imposed on physicians in the prescribing of liquor.

Bills involving World War Veterans' Relief, Animal Experimentation and nearly 3,000 bills of medical interest received the attention of this bureau.

ECONOMICS

The new Bureau on Medical Economics has reported an ambitious program of investigation of the various phases of the economical side of the practise

of medicine and, due in part to a resolution introduced by the Michigan Delegation, the Bureau will add more personnel to broaden the scope of its work during the coming year. A list of the following phases of economics will give an idea of the scope of this bureau:

- Capital investment in medicine.
- Care of the indigent sick.
- Collection methods and agencies.
- Contract practice.
- Costs of medical education—students' expenditures—complete cost.
- County and state dues.
- Dispensaries and clinics.
- Distribution of physicians.
- Distribution of medical facilities.
- Evaluation of patient's ability to pay.
- General insurance for physicians.
- General investments.
- Group practice.
- Health and accident insurance.
- Industrial medicine.
- Instruction in medical economics (college and extension courses).
- Malpractice insurance.
- Medical fees.
- Office plans.
- Office systems.
- Panel systems (of foreign countries).
- Physician's income.
- Sickness financing.
- Sickness insurance (compulsory and voluntary).
- Sickness savings.
- Sickness statistics.
- State, county and municipal health department activities.
- Thrift programs and workmen's compensation.

The Board has contacted with the American Bankers' Association and finds that member banks are authorized to encourage the public to open savings account to meet the costs of sickness similar to the Christmas savings account.

Other subjects taken up by the Board include the care of the injured and sick, and investigation into the accident and health claim proofs was suggested by the Michigan State Society and a further investigation of contract practice.

The Board reports that 32 awards were made during the past year for scientific research with a total amount of \$13,600.

The Board also reports the successful termination of the suit brought against the A. M. A. by Norman B. Baker of Muscatine, Iowa, and the Baker Institute for the Treatment of Cancer.

A resolution was introduced into the House of Delegates by J. D. Brook of Michigan recommending that the association study the problem of birth control. This was discussed at some length but no action by the Association was deemed advisable at the present time.

JUDICIAL COUNCIL

The report of the Judicial Council recited the tendency toward a radical change in the relations of physicians and medical societies towards the public as well as signs of change in the relations of physicians towards one another. As a result of the present economic crisis, many forces are pressing for the adoption of new methods of medical practice as well as for revolutionary changes in the very traditions of the profession with respect to the obligations and privileges of physicians in their contacts one with another. Some of these forces have been sadly misguided and will result in disaster to both medicine and public unless they are carefully guided.

For several years the Judicial Council has given exhaustive consideration to suggestions to the effect that the section of the Principles of Medical Ethics dealing with "Patents and Perquisites" should be changed to permit physicians to secure patents on the products of their inventive genius. After having given much careful thought to this matter, the Council sought the opinions of a relatively large number of representative physicians in various parts of the country. Responses received indicated an

overwhelming sentiment to the effect that there should be no change in the present provisions of the Principles of Medical Ethics with respect to patents.

The Council reported that there is some misunderstanding on the part of some officers of some societies concerning the word "Eligible" as applied to applicants for membership. The word as used in the constitution or by-laws of a medical society does not imply that the society is under any compulsion or obligation to elect an applicant to membership but simply means that the application of any reputable, registered physician shall be considered in the prescribed manner and the applicant elected or rejected as the vote of the members may indicate.

Similarly, there appears to be some misunderstanding concerning the significance of "transfer cards." No county society is compelled or obligated to accept into its own membership a "transfer" from another county society unless there is specific provision in its by-laws to that effect. A "transfer card" simply indicates that its holder is a member in good standing in some county society. Unless such a card is given validity as an authorization for admittance by express provision of the laws of the state association and the county society concerned, it has no weight whatever except as an evidence of the membership in another county society.

GROUP PRACTICE

An important supplementary report of the Judicial Council was presented to the Executive Session by Dr. George E. Follansbee, Chairman, as follows:

The privilege of healing the sick as a profession is a right granted only to those properly qualified and licensed by the state. It is a privilege belonging only to the medical profession. It is a sacrifice of professional dignity that this exclusive right of medicine is so often sold for individual gain or its possessor deprived of it against his will. In increasing numbers, physicians are disposing of their professional attainments to lay organizations under terms which permit a direct profit from the fees or salaries paid for their services to accrue to the lay bodies employing them. Such a procedure is absolutely destructive of that personal responsibility and relationship which is essential to the best interests of the patient.

Outstanding examples of this type of unearned gain are not difficult to find. There are insurance companies administering workmen's compensation benefits wherein the salaries or fees paid to the physician by the insurance company are so much below the legal fees on which the premium paid by the industry is based as to furnish a large direct profit to the insurance company. As mentioned in a former report of the Council, certain hospitals are forbidding their staffs of physicians to charge fees for their professional services to "house cases" but are themselves collecting such fees and absorbing them in the hospital income. Some universities, by employing full time hospital staffs and opening their doors to the general public, charging such fees for the professional care of the patients as to net the university no small profit, are in direct and unethical competition with the profession at large and their own graduates. They are making a direct profit by a practice of questionable legality, from the professional care. There are other examples which could be cited but those mentioned suffice.

The increasing number of such instances indicates either a thoughtlessness or a selfishness on the part of the participants that is disturbing to the Judicial Council and in its opinion warrants the Council in bringing the practice, with the disapproval, again to

the attention of the House of Delegates and through it to the profession at large.

VETERANS' LEGISLATION

Special consideration was given the report of the committee to contact the various Veterans' Associations and the results of their labors are summarized as follows by the committee:

First, our committee has established, through the Board of Trustees, a standing committee cooperating with the American Legion, The American Hospital Association and the Veterans' Administration to work out some change in policy in regard to the care of veterans.

Second, we have stimulated the medical legionnaires and the profession throughout the country to interest the local Legion posts in the dangers of federalized medicine from the standpoint of the veteran and the country.

Third, members of our committee have discussed veterans' legislation before the secretaries' conference and before the Annual Congress on Medical Education, Medical Licensure, and Hospitals.

Fourth, we have written and stimulated editorials and articles in the state medical journals on veterans' legislation. In this work Dr. Shoulders has been particularly active.

Fifth, every member of the committee has talked before groups of medical men and legionnaires, not only in their own but also in other states.

Sixth, by stimulating the establishment of a permanent committee in all states, representing the American Legion, American Hospital Association, Veterans' Administration and the American Medical Association, the machinery is gradually being built up for better mutual understanding and to prepare the way for any change in policy which may come in the future.

The committee was headed by C. B. Wright of Minnesota, and Angus McLean of Detroit, Michigan, was a member of the auxiliary committee.

LIBRARY

After an impassioned plea by Surgeon-General R. Patterson of the United States Army, the House of Delegates passed a resolution recommending that the Surgeon-General's Library be not located as part of the Congressional Library, but that it be housed in a fireproof building in the Army Medical Center in Washington, where it would be more accessible to the medical profession.

A resolution approving the standard classifying nomenclature of diseases was also passed.

An important resolution presented by the Reference Committee on Medical Education and passed unanimously was as follows:

Resolved, That it is the opinion of the House of Delegates of the American Medical Association that physicians on the staffs of hospitals approved for intern training by the Council on Medical Education and Hospitals should be limited to members in good standing of the American Medical Association, this ruling to apply to all hospitals except federal, state, county and municipal institutions.

Dr. Burt Shurly of Detroit, Section on Laryngology, Otology and Rhinology, introduced the following resolution which was adopted:

Whereas, The relief of economic chaos is dependent on the restoration of confidence and stability of thought among the American people in the place of hysteria, confusion and indecision;

Whereas, The Congress of the United States has in contemplation a return to the income tax in effect during the World War;

Whereas, The burden of earned income tax falls heavily as class legislation on the physician and surgeon who works day and night for the small fees he may be able to collect; be it

Resolved, That Congress be immediately advised of the injustice, inequality and the burden of this taxation on the medical profession in this time of depression and that they be requested to ponder, stop, look and listen to our appeal against injustice to the medical profession of America.

Various other resolutions were adopted. The call upon the A. M. A. to assist small hospitals to raise their standards, one protesting against the number of medical officers in the Army and one calling for closer coöperation between the County Medical Societies and the A. M. A.

Many matters, of course, were taken up by the House of Delegates, but the limitations of time do not permit their being recorded at this time and the members of the Michigan State Medical Society are respectfully referred to the full minutes in the issues of the Journal of May 21st and 28th respectively.

ELECTIONS

The election of officers by the House of Delegates resulted in the election of Dr. Dean D. Lewis of Baltimore as President-Elect. Dr. Rudolph Matas of New Orleans was elected Vice-President. The other officers were re-elected, Dr. Edward B. Heckel, Chairman of the Board of Trustees, having served two terms, was ineligible for re-election and Dr. A. W. Booth, of New York, was elected in his place. Dr. Rock Sleyster, of Milwaukee, was re-elected for a term of five years. F. C. Warnshuis was re-elected as Speaker.

Milwaukee was selected as the place for the 1933 Annual Session.

The Session was characterized by earnest application of all of the delegates, temperate discussion of the various subjects presented and intelligent and timely action on all matters which related to the betterment of the Practice of Medicine and the Profession at large.

The attendance of the Michigan Delegation present at all Sessions was 100 per cent.

Respectfully submitted,
The Michigan Delegation
By LOUIS J. HIRSCHMAN.

POST-GRADUATE CONFERENCE 11TH DISTRICT

One of the most successful and interesting Post-Graduate Conferences of the 11th Councillor District, State Medical Society, was held at the Western Hotel, Big Rapids, May 25, 1932.

The Mecosta County Medical Society sent out one hundred and seventy special invitations to the Medical men and Dentists in the following counties: Newaygo, Mason, Gratiot, Isabella, Clare, Muskegon, Oceana, Wexford, Kalkaska, Missaukee, Montcalm, Osceola and Mecosta. Every county society to whom invitations were sent was represented. The registration sheet showed sixty-nine present.

The program was as follows:

- 1:15 p. m. Opening Remarks, George L. LeFevre, M.D., Councillor.
- 1:25 p. m. "Diabetes," Wm. LeFevre, M.D., Muskegon.
- 2:00 p. m. "Therapy in Heart Lesion," B. R. Corbus, M.D., Grand Rapids.
- 2:30 p. m. "Prostatic Hypertrophy," W. J. Butler, M.D., Grand Rapids.
- 3:15 p. m. "Pneumonia," B. R. Corbus, M.D., Grand Rapids.
- 3:45 p. m. "Fractures," R. H. Denham, M.D., Grand Rapids.
- 4:15 p. m. "Gynecological Therapy," Alexander M. Campbell, M.D., Grand Rapids.
- 4:45 p. m. "Shoulder Joint Injuries," R. H. Denham, M.D., Grand Rapids.
- 6:00 p. m. Dinner, Western Hotel

7:00 p. m. "Social Trends in Medicine," F. C. Warnshuis, M.D., Grand Rapids.

The program was a varied and excellent one, the subjects practical and instructive, the speakers thoroughly familiar with their subjects, and the lantern slides shown elucidated and intensified the presentations.

The meeting was called to order by Dr. George LeFevre, Councillor of the 11th District, at 1:25 p. m., and was completed at 5:15 p. m. An excellent dinner was served by the Hotel at 6:00 p. m. At 7:00 p. m. Presiding Officer LeFevre addressed the members present on the frequency of malpractice suits, and urged all to discourage them. Dr. LeFevre quoted from the late Dr. Osler's address on the necessity for exercising caution in giving opinions that might incite patients to begin malpractice suits. At the conclusion of this, the chairman introduced the post-prandial speaker, Dr. F. C. Warnshuis, Secretary of the State Medical Society, who gave a very optimistic and well received opinion of the "Social Trend in Medicine." The speaker in his customary forceful manner, exhorted all medical men to be the leaders in the movement in their respective communities. At the conclusion of Dr. Warnshuis' address, the Chairman congratulated the Mecosta County Society on the excellent coöperation given him. In the absence of President MacIntyre, the Secretary of the Mecosta County Medical Society, Dr. John L. Burkart, was called on. He briefly referred to the spirit of fraternity which existed at the present, in the profession at large, and in Mecosta County in particular, and ventured the opinion that no time in his residence in Big Rapids and Mecosta County since 1881 has such harmony existed. Malpractice suits are unknown here. In conclusion he thanked the society for their generous assistance in making this meeting a success and suggested that the old maxim "Do unto others as you would have others do to you, what you are unwilling to receive be sure you never do," was the best preventative of malpractice suits.

Guests present were Major W. T. Dodge, honorary member, Dr. Frances Hennessey of the Couzens Foundation Unit; Miss May Bergey, County School Nurse; and Miss Lura Addie, City School Nurse.

JNO. C. BURKART, Secretary.

BIRTH CONTROL

Mrs. Morton Keeney,
President, Michigan League for Birth Control,
1222 Lake Drive, S. E.
Grand Rapids, Michigan.

My dear Mrs. Keeney:

At the last meeting of the Executive Committee of the Council of the Michigan State Medical Society, a communication from you was read, asking the endorsement by the Michigan State Medical Society of the work of the Michigan League for Birth Control. Let me apologize for the delay in answering.

The Council of the Michigan State Medical Society looks upon this matter as a controversial subject, and has not been willing, when the matter has previously been brought up, to take such action as would commit the Society to a definite policy. The Executive Committee, speaking for the Council by Authority, and for the profession as a whole, believes that, while technically the matter is a medical subject, it remains mainly in the domain of Sociology. We believe that there is something to be said on each side of the controversy. We know that there are members of our profession who look upon this movement as a definite social-economic problem, others who feel that it is a definitely personal matter, and still others who oppose the movement on

religious and moral grounds. Until there is a greater unanimity of opinion in the profession and in Society in general, we believe that the Michigan State Medical Society, as a unit of Organized Medicine, should not take the formal position of an advocate.

If and when Society agrees on the legitimacy and propriety of contraceptive measures, we believe it is for the physician to guide, control and safeguard the methods employed. The necessity for this we realize has been, to a considerable extent, recognized by the leaders of the Birth Control Movement.

We see no reason why individual members of the profession who are convinced of the wisdom of their course should not take an active part in the movement as individuals, but we do not believe that we are, at this time, ready to put the stamp of approval upon it.

We feel that it is not unlikely that the time is approaching when it will be incumbent upon Organized Medicine to take a stand on this question. What that stand will be depends somewhat upon the form of the activities of the Birth Control League.

If we look upon this movement as an experiment in Sociology, then the doctor is, by virtue of his professional contacts, in an unusual position to determine for himself whether the good that is to come out of this movement is to well over-balance the possible evils. Once convinced that the good predominates, he will have a great desire to have Organized Medicine further the project.

Very sincerely yours,

BURTON R. CORBUS,
Chairman of the Council.

COUNTY SOCIETIES

GRATIOT-ISABELLA-CLARE COUNTY

The April meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Wright Hotel, Alma, Thursday, April 21. Sixteen members and five visitors had dinner together and four members came in after dinner.

The minutes of the previous meeting were read and approved.

President Burt then introduced Doctor Bruce H. Douglas, Supt. of the Maybury Sanatorium, Northville, Michigan. The subject of the Doctor's talk was "The Treatment of Pulmonary Tuberculosis," with special reference to Pneumothorax. Some of the points made by the Doctor were as follows:

Pneumothorax as a form of treatment was first recommended by an English physician named Carson in the year 1821. It was later recommended by an Italian physician. In 1898 J. B. Murphy and his associate Tice reported a series of cases treated by pneumothorax. It was not until 1912 that the X-ray was brought into use in connection with this treatment and that pneumothorax was more generally used. About 300 c.c. is injected the first time. The patient is then examined with the fluoroscope to decide when to repeat the injection. Two questions to decide at this time: the state of the lesion—is the cavity closed? Is the sputum negative? If the sputum which was positive is negative, we believe the case is improving. Air embolism is a possible accident. If it does occur, lower the patient's head until relieved. Pneumothorax may be used to check hemorrhage. Advisable to consider pneumothorax as a possible treatment in every case of pulmonary tuberculosis. Seventy-seven per cent of arrested cases have received some form of collapse therapy. In 1927, 8 per cent of patients discharged as arrested cases and 2.5 per cent died. In 1931,

34 per cent discharged as arrested and 10 per cent died. The Doctor showed a number of X-ray pictures to show the progress of cases and also answered many questions.

On behalf of the Society, President Burt thanked Doctor Douglas for his excellent presentation of this subject.

Meeting adjourned.

E. M. HIGHFIELD, M.D., *Secretary*.

MIDLAND COUNTY

The May meeting of the Midland County Medical Society was held at the Midland Country Club on Friday evening, May 13. The meeting was combined with that of the personnel of the County Health Departments of Genesee, Saginaw, Isabella and Midland counties. Six members of our society and the Health Commissioners and nurses of these units had dinner together.

The meeting was called to order by the president, Dr. C. V. High, Sr., and was immediately turned over to Dr. A. W. Newitt, Health Commissioner of Midland county.

Dr. Newitt read an interesting paper on "Coöperation between the Private Physician and the Health Department in the Control of Measles." Inoculation of exposed preschool children with citrated whole blood from immune older members of the family was recommended by Dr. Newitt. In the discussion that followed, cases were reported by members who have used the treatment and, although the number of cases was small, the consensus of opinion was enthusiastically in favor of the procedure. Favorable comment was made on the work of the members of the Health Department staff in advocating the treatment to parents and referring exposed preschool children to their family physician for the treatment.

E. J. DOUGHER, M.D., *Secretary*.

MONROE COUNTY

The last two meetings of the Monroe County Medical Society have been of especial interest.

On April 21, Dr. J. E. Gordon, of the Herman Kiefer Hospital, Detroit, spoke on "Acute Infectious Diseases of the Central Nervous System." He illustrated his talk with lantern slides.

On May 19, the society met at the new Ypsilanti State Hospital at 3:30 P. M. Dr. George F. Inch and Dr. O. Y. Yoder conducted a tour of the institution. The society was much interested in the features of the building for the care of the mentally diseased. Then the hospital staff entertained the society at dinner. The occasion was made festive by excellent vocal solos and duets by patients. In the evening, Dr. Inch read a paper on "The Diagnosis of Mental Diseases," and Dr. Yoder gave a talk on "The Mental Hygiene Movement." Monroe County Society surely enjoyed their visit to Ypsilanti State Hospital.

FLORENCE AMES, M.D., *Secretary*.

MUSKEGON COUNTY

May 28 the Muskegon Society had a dinner meeting at the Alhambria Hotel. Drs. Jos. Likely and Louis LeFevre gave papers on "The Use of Radium in Surgery" and "Backache," respectively. The June meeting was held at the Country Club at 6:30 P. M., June 10. After dinner Dr. Marshall of Flint gave an interesting talk on "Present Day Medical Economics." A long and interesting discussion followed.

A report of the death of Dr. Lucy Eames, Feb. 28, 1932, and Dr. Jacob Cramer, April 5, 1932, was made.

M. E. STONE, *Secretary*.

NORTHERN MICHIGAN

The June meeting of the Northern Michigan Medical Society was held at the Perry Hotel, Petoskey, June 9, 1932. The meeting was well attended, there being twenty-four members and two guests.

After dinner the meeting was called to order by President Stringham. The speaker for the evening was Dr. Sheets, Superintendent of the Traverse City State Hospital. Dr. Sheets gave an interesting talk on various phases of his specialties and the relation to the general practitioner. He spoke of how the general practitioner could assist his department in the care of the insane by proper filling out of the various papers necessary for the commitment of an insane person to a hospital.

The regular business of the society was then taken up. The secretary's report was read. The following committees were appointed: Program, Drs. Armstrong and Riffenberg.

The applications for membership of Drs. Monfort of Wolverine and Atkinson of Indian River were approved and these men given membership.

Dr. Mast, Petoskey, was elected delegate to the State meeting; Dr. Riffenberg, Gaylord, alternate.

The following motion was made and passed by the society: The Northern Michigan Medical Society protests the issuing of a license to out of state doctors for the purpose of practicing medicine for a short time in the resort section of this state. A copy of the resolution was to be sent to the State Board of Medical Registration.

A motion was made and carried that doctors be allowed to enter into temporary contracts, for the care of the indigent, until the society decides on a definite program.

Meeting adjourned.

E. J. BRENNER, *Secretary*.

O. M. O. C. R. O.

The meeting of the O. M. C. O. R. O. County Medical Society was held at West Branch, June 1st, and was attended by 100 per cent of the members. Dr. William Marshall of Flint, Michigan, gave a very interesting discussion on the economic survey being made by himself and committee. Following this he requested that the various members discuss their local problems, which were ably discussed by Dr. Paul Urmston and Dr. Hess of Bay City; also Dr. Keyport of Grayling, Dr. Rifenberg of Gaylord, Dr. Bogart of Flint, and Dr. Johnson, local health officer of West Branch District.

This was one of the most enthusiastic meetings held in several years.

C. G. CLIPPERT, M.D., *Secretary*.

ST. JOSEPH COUNTY

The St. Joseph County Medical Society held its regular monthly meeting at the Hotel Elliott in Sturgis, Friday evening, May 27, 1932.

Dr. P. O. Meness of Blodgett Memorial Hospital, Grand Rapids, gave a very interesting and instructive paper on Colles and hip fractures. A large number of lantern slide skiagrams were shown. The important diagnostic signs were indicated.

Dr. Hodgen of the same institution very capably outlined the treatment of these cases. Dr. Hodgen has devised several new methods in the treatment of orthopedic cases. In this paper he particularly stressed the importance of the after-care, which in many cases is overlooked or inadequate.

At the January meeting the following officers were elected for 1932: President, Dr. M. F. Parish, Sturgis; Vice-president, Dr. I. Jenks, Centreville; Secretary-treasurer, Dr. R. A. Springer, Centreville;

Delegate to the State Society, Dr. R. A. Springer, Centreville.

No more meetings will be held until Fall.

R. A. SPRINGER, M.D., *Secretary*.

OAKLAND COUNTY

The June meeting of the Oakland County Medical Society was held at the Hotel Heldenbrand.

The meeting was called to order by President R. H. Baker.

The minutes of the last business meeting were read and stood approved.

President Baker read the "Code of Ethics" adopted by Wayne County Medical Society in regard to Industrial Surgery. An Ekelund-Farnham motion successfully disposed of this matter to the Board of Directors.

The cancer material furnished by Dr. Bloodgood, for purposes of public teaching, was referred to the Board of Directors.

Dr. Furlong gave a résumé of the proposed activities of the Birth Control project.

Dr. Ekelund gave thanks to the Society for its co-operation in the Pre-school Round-up, and reported a letter of appreciation from the P. T. A.

Dr. Ekelund also called attention to the necessity for preparing for medical care of the indigents in Pontiac after January, 1933.

The County Health Department has asked our society to sanction a pamphlet concerning the "Care of Expectant Mothers," which they desire to send out under the auspices of the O. C. M. S. An Ekelund-Hoyt motion to approve this was carried.

Dr. Furlong reported a meeting of the Medico-Legal Committee last week. He expressed satisfaction with the coöperation the prosecutor's office is giving us. He also gave out a warning against an increase in number of malpractice suits due to the times.

Dr. F. H. Lashmet spoke on "Water Balance Treatment of Edema." The talk was praised by more than one as the best they had ever heard at a county society meeting.

Dr. Sherman deplored the fact that so small a number of members turned out to hear the program. As a matter of fact but twenty-two members were present, only seventeen of those being present during the scientific program.

Adjourned 11:00 p. m.

D. F. HOYT, *Secretary*.

HISTORICAL SKETCH

The organization of the medical profession in the Territory of Michigan was made possible when the Territorial Legislative Council on June 14, 1819, passed "An Act to incorporate Medical Societies for the purpose of regulating the Practice of Physic and Surgery in the Territory of Michigan."

Under this act the Medical Society of the Territory of Michigan was organized at Detroit on August 10, 1819, the following officers being elected: President, William Brown; Vice-president, Stephen C. Henry; Secretary, John L. Whiting; and Treasurer, Randall S. Rice.

The medical law granted authority to the Board of Censors to examine students and to issue licenses to practitioners of medicine and surgery. The law also provided that licensed physicians in any county, upon application to the Territorial Medical Society, were granted the right to form a county society, which, within the limits of the county, had the same rights as the parent society. The first group of physicians to take advantage of the latter provision were Drs. Cyril Nichols, Rufus Pomeroy, William Kittridge and David E. Lord, who, on June 12, 1827,

were granted permission to form the Washtenaw County Medical Society.

On June 28, 1831, the Territorial Medical Society granted permission to Drs. William Thompson, David L. Porter, Thaddeus Thompson and Ezra S. Parke to organize a Medical Society in the County of Oakland.

The Medical Society of the County of Oakland was formally organized at the Court House in Pontiac on July 14, 1831, the following officers being elected: President, William Thompson, Pontiac; Vice-president, John B. Chamberlain, Auburn and Pontiac; Secretary, David L. Porter, Pontiac; Treasurer, Ezra S. Parke, Bloomfield; Censors, Thaddeus Thompson, Troy; Ezra S. Parke, Alonzo Cressy, Pontiac; John S. Livermore, Rochester; and Israel B. Richardson, Pontiac.

Thus the Oakland County Medical Society was formally organized, the second county society to be formed in Michigan. There are but few records available as to the activities of the society during its early years. Occasionally a card appears in some of the early papers, giving notice of an approaching annual or semi-annual meeting; less frequently one will find a list of the officers elected at such a meeting.

The names of some of the other early members are as follows: Joseph C. Davis, Rochester; George Davis, Pontiac; Chester McCollom and George W. Williams, Auburn; Cyrus Chipman, Orville Morrison, Herrick Bromley, Rollin C. Sprague and John K. Hudson, Avon and Rochester; Ziba Swan, Ebenezer Raynale and Godfrey Waldo, Bloomfield and Birmingham; Samuel C. Allen and Nelson Abbey, Clarkston; Nathaniel Buel Eldredge, James G. Rodgers, John B. Barnes and Luther D. Whitney, Commerce; Alanson Hudson, Isaac Wixom, Oliver P. Strobbridge and Henry F. Walker, Farmington; Frederick Andros, John Jeffery, David C. Pratt and Henry S. Buel, Franklin and Southfield Township; William Gage and Ira C. Alger, Holly; Thomas Curtis and Cyrus Wells, Lyon Township; Barnabas Holmes, Daniel Arms, Henry K. Foote, Daniel A. B. C. Fox and Zebina M. Mowry, Milford; John C. Emery, Thomas Sellman and William R. Marsh, Novi; William Wilson, Pine Lake; Sterling Way Allen, Isaac Paddack, M. LaMont Bagg; Robert D. Lamond, Aaron L. Leland, Alexander Ayers, Ithamer B. Caww, Max Myers, George Kinney Johnson, A. W. Rogers, Washington G. Elliott and Abriam P. McConnell, Pontiac; Henry K. Lathrop, Oakwood and Royal Oak; David W. Smead and Israel G. Bugbee, Orion; Pliny Power, Egbert Burdick, Erastus Spalding and Seth Sprague, Oxford; Henry Bradley, Levi C. Rose, Flemon Drake and Augustus E. Brewster, Royal Oak; Hiram Briggs and Edward Bartlett, Springfield; Oscar Harry Chipman, Nehemiah B. Stebbins and Isaac Adams, Troy; James M. Hoyt, Walled Lake; Gilbert E. Waters, White Lake; Major Curtis, Royal Oak and Birmingham.

Physicians from nearby counties, where a county society had not been organized, were eligible for membership. Among such members were John W. King, Grand Blanc; Washington Z. Blanchard, Shiawassee town, and Samuel W. Pattison of Dibbleville (now Fenton).

The original Oakland County Medical Society probably went out of existence about 1851 when the legislature repealed the medical law, a procedure that deprived the medical societies of their former powers and privileges.

The last recorded meeting was a semi-annual meeting held on December 7, 1850. President Alanson Hudson delivered an address, and Dr. G. K. Johnson, delegate to the A. M. A., delivered an extensive report on the plans of organization of the

association, as outlined at the annual A. M. A. meeting held at Cincinnati, Ohio, in May, 1850.

Drs. A. P. McConnell and Samuel C. Allen were admitted as members.

Drs. Hoyt, Bagg and Johnson were appointed delegates to the A. M. A.

Drs. McCollom, Elliott, and Walker of Farmington, were appointed delegates to the State Medical Association.

The Medical Society of Michigan was formally dissolved at a meeting held in May, 1851.

On March 8, 1854, the North-Eastern District Medical Society of Michigan was organized at Romeo for the purpose of establishing a strong medical organization in the district embracing the counties of Oakland, Macomb, Lapeer, St. Clair, Sanilac, and later, Genesee.

Dr. William Brownell, Utica, in the notice of the meeting, stated: "This call is made by the medical societies of Lapeer and Macomb conjointly, the only county organizations, I believe, in this part of the state.

"The lack of numerical strength in these societies has rendered them less efficient and useful than they would otherwise have been; and the object of this meeting is, if possible, to consolidate, in one organization, the members of the profession in the counties named. It is to be hoped that the medical men in this region will respond with zeal to the growing interest being manifested in the state and throughout the country in the importance of thorough medical organization."

Oakland County physicians were active in this organization, frequently serving as officers. Meetings were held in Oakland County at Pontiac and Rochester. Oakland County physicians known to have been members are as follows: Chester McCollom, Auburn; John P. Wilson, Pontiac; W. C. Smith, Troy; Jesse E. and Jeremiah C. Wilson of Rochester; Isaac Paddack, William T. Lauderdale, Pontiac; Francis M. Wilcox, Rochester; William H. Haze, Farmington; Franklin B. Galbraith, Pontiac; David Ward, Orchard Lake.

With the formation in 1902 of strong county societies, which became component parts of the Michigan State Medical Society, there was no longer a need for a district organization, hence, in 1903, the North-Eastern District Medical Society ceased to exist.

In 1870, the Flint and Pere Marquette Railroad commenced operating trains from Flint through Holly, Highland, Milford, Wixom, Novi, Northville, Plymouth, Wayne to Monroe and, following the opening of this road, the physicians from these and adjacent villages formed the Union Medical Society of Wayne, Washtenaw and Oakland Counties, which was formally organized at Northville, December 6, 1871.

Among the Oakland County physicians holding membership were the following: James M. Hoyt, Walled Lake; William F. Hovey, Milford; Alexander D. Hagadorn, Highland and Milford; Eli Woodman, Farmington; Zebina M. Mowry, Milford; Charles Gray Robertson, White Lake; Nathan C. Hall, Davisburg; William Aitcheson, Ortonville; Oscar N. Tindall and Seymour A. Manzer, Holly; Robert Johnston, Milford; Erwin A. Chapman, Walled Lake; George W. Lowry, Commerce; DeWitt C. Wade, Holly. This society was in existence for about ten years.

About 1885 the physicians of the western part of the County formed an Oakland County Medical Society which was in existence in 1894 and had 27 members. Meetings were held bi-monthly. The secretary was the only officer elected, the president serving pro tempore. As yet there are no data available as to the activities of this society. It has also

been mentioned as the Oakland County Academy of Medicine.

On June 27, 1892, the Pontiac Medical Society was organized with William McCarroll as secretary. The president was pro tempore only.

Pursuant to a circular letter issued by Dr. Colonel Bell Burr of Flint, Michigan, the Councilor of the 6th District, and a call sent out by Drs. Mason W. Gray, Jason Morse, George H. Drake and William McCarroll, the Executive Committee of the Pontiac Medical Society, the following members of the Medical Profession in Oakland County, Michigan, assembled in the Council Chamber of the City of Pontiac on September 9, 1902; J. J. Moore, Farmington; C. M. Raynale, Birmingham; D. W. C. Wade, Holly; R. LeBaron, Pontiac; N. T. Shaw, Birmingham; William Aitcheson, Ortonville; T. H. Prust, Pontiac; G. H. Drake, Pontiac; J. L. Campbell, Birmingham; H. S. Chapman, Pontiac; C. D. Morris, Pontiac; E. A. Christian, Pontiac; S. E. Galbraith, Pontiac; D. G. Castell, Holly; V. H. Wells, Pontiac; Robert Y. Ferguson, Pontiac; R. G. Dean, New Hudson; J. C. Black, Milford; Aileen M. Betteys, Oxford; G. W. MacKinnon, Oxford; B. C. H. Spencer, Rochester; John W. Fox, Orion; N. B. Colvin, Pontiac; F. B. Galbraith, Pontiac; H. C. Guillot, Pontiac; W. McCarroll, Pontiac; J. H. F. Mullett, Pontiac; John M. Truscott, Farmington; J. J. Murphy, Pontiac; M. W. Gray, Pontiac; I. H. Neff, Pontiac; Jesse Gillett, Amy; J. Morse, Pontiac; also Dr. Burr, Councilor, and Dr. J. C. Wilson of Flint, Vice-president of the Michigan State Medical Society.

At this meeting the Oakland County Medical Society was reorganized, a constitution and by-laws adopted, and the following officers elected: President, Franklin B. Galbraith, Pontiac; Vice-president, DeWitt C. Wade, Holly; Secretary-Treasurer, William McCarroll, Pontiac; Board of Directors, Charles M. Raynale, Birmingham, Edmund A. Christian, Pontiac, Mason W. Gray, Pontiac.

CHARLES A. NEAFIE, M.D.

NEUROPSYCHIATRIC COUNTERFEITS OF ORGANIC VISCERAL DISEASE

According to T. H. Weisenburg, J. C. Yaskin, Philadelphia, and Henry Pleasants, Jr., West Chester, Pa., a variety of neuropsychiatric manifestations often mask visceral disease of etiologic significance. Visceral disease may give rise to neurologic manifestations by reason of the fact that the viscera are innervated by the vegetative nervous system. They are not only influenced by the segmental and supra-segmental portions of the central nervous system and of the emotions but in turn are capable, when disturbed, of giving rise to a disturbance in the emotions and by reason of reflected pain to all sorts of peripheral phenomena. Psychic and emotional states influence the vegetative nervous system and visceral functions and vice versa. Illustrative cases are given wherein neuropsychiatric symptoms have masked cardiac, pulmonary, gastro-intestinal, pelvic and genito-urinary diseases. The causes of errors in diagnoses are traceable to faulty and incomplete examinations, to the failure of judgment and proper evaluation of neuropsychiatric manifestations, and to the fact that in predisposed individuals the earliest manifestations of visceral disease may be purely psychiatric in type. The author believes that, from the neuro-psychiatric standpoint, disease cannot be regarded as purely psychic or purely somatic. Every disease has a somatic as well as a psychic component and should be viewed from that standpoint for both diagnostic and therapeutic purposes. Moreover, every case should be studied in the light of a total situation.—*Journal A. M. A.*

THE DOCTORS' LIBRARY

LANG'S GERMAN-ENGLISH DICTIONARY OF TERMS USED IN MEDICINE AND THE ALLIED SCIENCES WITH THEIR PRONUNCIATION. Revised and Edited by Milton K. Meyers, M.D., Neurologist to the Northern Liberties Hospital; Chief of Nerve Clinic, St. Agnes Hospital, Fourth Edition Enlarged. P. Blakiston's Son & Co. Inc., Philadelphia. Price \$10.00.

This book is indispensable to one interested in obtaining a reading knowledge of German medical literature. It contains approximately 56,500 definitions, also, the pronunciation of German words. The work, which contains over 900 pages, is in the same style of binding and typography as Gould's well known medical dictionary by the same publishers.

AN EXPERIMENTAL AND CLINICAL STUDY OF PAIN IN THE PLEURA, PERICARDIUM AND PERITONEUM. By Joseph A. Capps, M.D., Professor of Clinical Medicine, University of Chicago, with the Collaboration of George H. Coleman, M.D., Assistant Professor of Medicine, Rush Medical College. A foreword by Anton J. Carlson, M.D., Ph.D., Chairman of the Department of Physiology, University of Chicago. Price \$3.00. The Macmillan Company, New York, 1932.

When one considers that the symptom that most frequently sends the patient to the doctor is pain, its importance is not likely to be over-estimated. Many serious attempts have been made to study pain, but the subject is in no danger of becoming exhausted. The present work by a clinician of note deals with the subject as it affects the thoracic cavity and contents. This brief monograph of ninety-nine pages embodies observations made over a period of twenty years, chiefly at the Cook County Hospital, Chicago. It is well illustrated with line drawings and diagrams.

CLINICAL INTERPRETATION OF LABORATORY REPORTS. By Albert S. Welch, A.B., M.D., Clinical Instructor in Medicine in the University of Kansas School of Medicine, Kansas City, Kansas; Director of the Laboratory of the Alfred Benjamin Dispensary, etc. With Sixteen Illustrations and a Frontispiece in color. P. Blakiston's Son and Co., Inc., Philadelphia, Pa.

Clinical laboratory, or we might perhaps say laboratory diagnosis in general, has come in for considerable disparaging criticism. The chief difficulty lies in the fact of the inability to correlate the laboratory with the clinical findings, and vice versa. The present book forms a sort of connecting length between the technical laboratory and the clinician. It would be well if both laboratory worker and clinician were familiar with its contents, inasmuch as the book serves as a medium of introduction of one to the other. Speaking of interpretation of laboratory reports, the author does not include the X-ray laboratory. There are chapters on Urine, Blood, Blood Chemistry, Serology, Smears, Cultures, Cerebrospinal Fluid, Gastric Contents, Duodenal Contents, Feces, Sputum, Skin Tests, Tissues, Basal Metabolic Rate, and Electrocardiogram. The work is well printed, less well illustrated with line drawings and there is a frontispiece in color.

PRACTICAL TREATMENT OF SKIN DISEASES, WITH SPECIAL REFERENCE TO TECHNIQUE. A PRACTICAL MANUAL FOR PRACTITIONERS AND STUDENTS. By Eduard Ahlswede, M.D., New York and Hamburg. Formerly Assistant Physician, University Skin Department, Direction of Prof. Unna, Eppendorf Hospital, Hamburg. Forewords by Howard Fox, M.D., New York, and Prof. Dr. P. G. Unna, Hamburg. 798 pages, 77 illustrations. Price \$12.00 net. Paul B. Hoeber, Inc., Publishers, New York, N. Y.

This work is, as stated in its title, a practical manual on dermatology for practitioners and students. It is a work for the general practitioner rather than the specialist in skin diseases. The author has

stressed the ambulatory treatment of skin diseases as they are found in everyday practice. He has explained the technic of treatment in such minute detail that it is easy to follow even by the inexperienced. As a principle the author emphasizes the importance of investigating the cause of skin affections where possible; treatment is a matter of eliminating the causative factor rather than allaying symptoms.

PHYSIOTHERAPY: ITS PRINCIPLES AND PRACTICE.

By F. Howard Humphris, M.D.(Brux.), F.R.C.P. (Edin.), M.R.C.S. (England), D.M.R. and E.(Camb.), Hon. Consulting X-ray Physician and Electrotherapist to The London Clinic, and Ralph E. Stuart-Webb, M.B., B.S.(Lond.), M.R.C.S., L.R.C.P. With contributions by Frank Romer, M.D., A. E. Hayward Pinch, F.R.C.S., and A. Gordon Watson, M.D., 399 pages; 74 illustrations. The Macmillan Company, New York, 1932. Price \$4.50.

The author is one of the foremost physical therapists in England; this book, therefore, reflects an authoritative British viewpoint upon this highly technical and exceedingly diverse subject. One half of the book: Principles, briefly describes the numerous electrical and phototherapeutic agencies; X-ray and radium therapy; massage and manipulation; spa treatment; melted paraffin-wax bath; foam therapy; carbon dioxide snow; and vibration. The concluding half of the work: Practice, enumerates the various diseases and conditions in which some one or other physiotherapeutic agency may be indicated; and the technic of its application. Owing to the necessarily abbreviated space permissible to each of the many important and semi-important agencies enumerated, the work is especially to be commended to the informative attention of those who have no particular urge to qualify as physical therapists but do desire to intelligently comprehend the why and the wherefore: the indications and contraindications, for this imperfectly appreciated essential to successful practice. It should also be valuably instructive for those physical therapists who realize that only by interchange of thought and comparison of methods can an assured science and superlative results be eventually evolved.

J. E. G. W.

PRINCIPLES OF PREOPERATIVE AND POSTOPERATIVE TREATMENT. Reginald Alex Cutting, M.D., C.M., M.A., Ph.D., Assistant Professor of Surgery, Louisiana State University Medical Center; formerly Assistant Professor of Surgery, Tulane University Medical School, New Orleans. Foreword by Rudolph Matas, New Orleans. With 76 illustrations. Paul B. Hoeber, Inc., New York, 1931. Price \$10.00.

In reviewing Cutting's latest contribution to surgery, "Principles of Preoperative and Postoperative Treatment," we have a book which deals in detail with the Surgical and Medical Problems of Operative Surgery. By this I mean not the Problems that are found in the operating room, but those that occur both before and after operative work is attempted. Therefore, the title of the book is self-explanatory. These facts bring out again the danger of the surgeon whose interest begins and ends at the operating room door. Enough time should be spent on the taking of the history and investigation of the patient, both as regards occupation and habits. Of special interest is Chapter No. 6 on "Water Balance, Dehydration, and the Preoperative and Postoperative Administration of Fluids," and following in Chapter No. 7, "Disturbances of Acid-Base Equilibrium: Acidosis and Alkalosis." The chemistry and comprehensive ideas which are given in these two chapters are undoubtedly (if followed) bound to help, especially in the extreme cases. Chapters Nos. 8, 9, 12 and 13 deal in a very thorough manner with the treatment of the abdominal conditions.

The endeavor of the surgeon should be to reduce

postoperative morbidity and mortality. Doctor Cutting has shown what means should be employed to accomplish this result.—W. D. B.

THE EXPECTANT MOTHER'S HANDBOOK by Frederick C. Irving, M.D., Professor of Obstetrics, Harvard Medical School, Visiting Obstetrician, Boston Lying-In Hospital. With illustrations. Boston and New York. Houghton Mifflin Company, The Riverside Press, Cambridge. Price \$1.75.

Obstetricians and physicians in general practice who come in contact with the expectant mother will welcome this little handbook. It is authoritatively written in non-technical language and supplies all the information that and a great deal more than the average expectant mother would think of asking. It cannot be too highly recommended to the more intelligent expectant mothers. Many, however, would not understand if the whole subject were explained to them in words of one syllable. However, for the class for which it is intended we know of no better compendium of information.

GASTRIC SECRETION AFTER STIMULATION WITH HISTAMINE IN PRESENCE OF VARIOUS TYPES OF GASTRIC AND DUODENAL LESIONS

Mandred W. Comfort and Arnold E. Osterberg, Rochester, Minn., found that histamine is of value in distinguishing true from false achylia. However, histamine failed to cause a secretion of free acid in one case in which the Ewald meal did cause such secretion; it produced secretion of free hydrochloric acid of a concentration less than that evoked by the Ewald meal in two other cases, and it produced concentration only equal to or within 10 points of that evoked by the Ewald stimulus in fourteen cases. The histamine test may distinguish the more serious forms of secretory disturbance from those of a transitory nature, but it does not always give conclusive information as to the underlying anatomic lesion or the prognosis. It would appear that histamine does not always evoke a maximal response and that the constancy of the response can be questioned. In the authors' experience, it is not apparent that the response of gastric secretion to histamine is of greater value than the response to the Ewald meal in the differential diagnosis of peptic ulcer and gastric carcinoma. In cases in which reduced concentration of free acid and reduced volume have diagnostic significance, as in gastric carcinomas, the Ewald meal gives information which compares favorably with that obtained after the use of histamine. Cases of gastric carcinoma were encountered in which the concentration of free acid and the volume have been almost as great as those obtained in cases of duodenal ulcer. So far as the volume of gastric secretion is concerned, there appears to be a significant correlation between volume and free acidity; on the other hand, the volume of secretion, as aspirated, varies widely in all types of lesions studied. Its diagnostic significance is of such limited value and the possible errors in estimation so great that it does not seem to add much information of diagnostic value. There is such a high correlation between the highest concentration of total chloride and of free acid, following stimulation by histamine, that determinations of total chloride following administration of histamine offer little extra information concerning the secretory activity of the stomach and do not add sufficiently to the practical value of histamine as a test of secretory capacity to warrant the estimation of concentration of chloride. The authors believe that the advantages of the stimulus of histamine over the Ewald meal are not great enough to warrant the adoption of the fractional method with stimulation by histamine as a routine. The

value of histamine in the study of chemical values after resection of the stomach, or gastro-enterostomy, lies in disclosing free acidity, masked by the neutralizing influence of the base in the regurgitated duodenal or jejunal juice. Additional evidence of the unimportance of the humoral or hormonal influence of the antral portion of the stomach in maintaining the secretory capacity of the stomach is mentioned briefly.—*Journal A. M. A.*

RHEUMATOID (INFECTIOUS) ARTHRITIS AND ACUTE RHEUMATIC FEVER: DIFFERENTIAL DIAGNOSIS

In seventeen patients with rheumatoid (infectious) arthritis on whom A. M. MASTER and HARRY JAFFE, New York, took electrocardiograms daily for an average of fifty-three days, only the slightest evidence of myocardial involvement was recorded. In sixty-three cases of acute rheumatic fever, definite electrocardiographic evidence of myocardial involvement appeared in 100 per cent. The authors believe that rheumatoid (infectious) arthritis, no matter what it may be, is not a disease of the heart; acute rheumatic fever is preëminently a carditis. The clinical application is this. In a case in which the differential diagnosis between rheumatoid (infectious) arthritis and acute rheumatic fever is difficult, if there are no electrocardiographic evidences of myocardial involvement, the authors would be prone to call it the former disease, whereas when there are electrical tracings definitely indicative of myocardial involvement they would be prone to call the disease acute rheumatic fever. The former affects the heart to the slightest degree, if at all; the latter to a maximum extent.—*Journal A. M. A.*

COMPLEX OF ECZEMA: DIAGNOSTIC AND ETIOLOGIC ANALYSIS

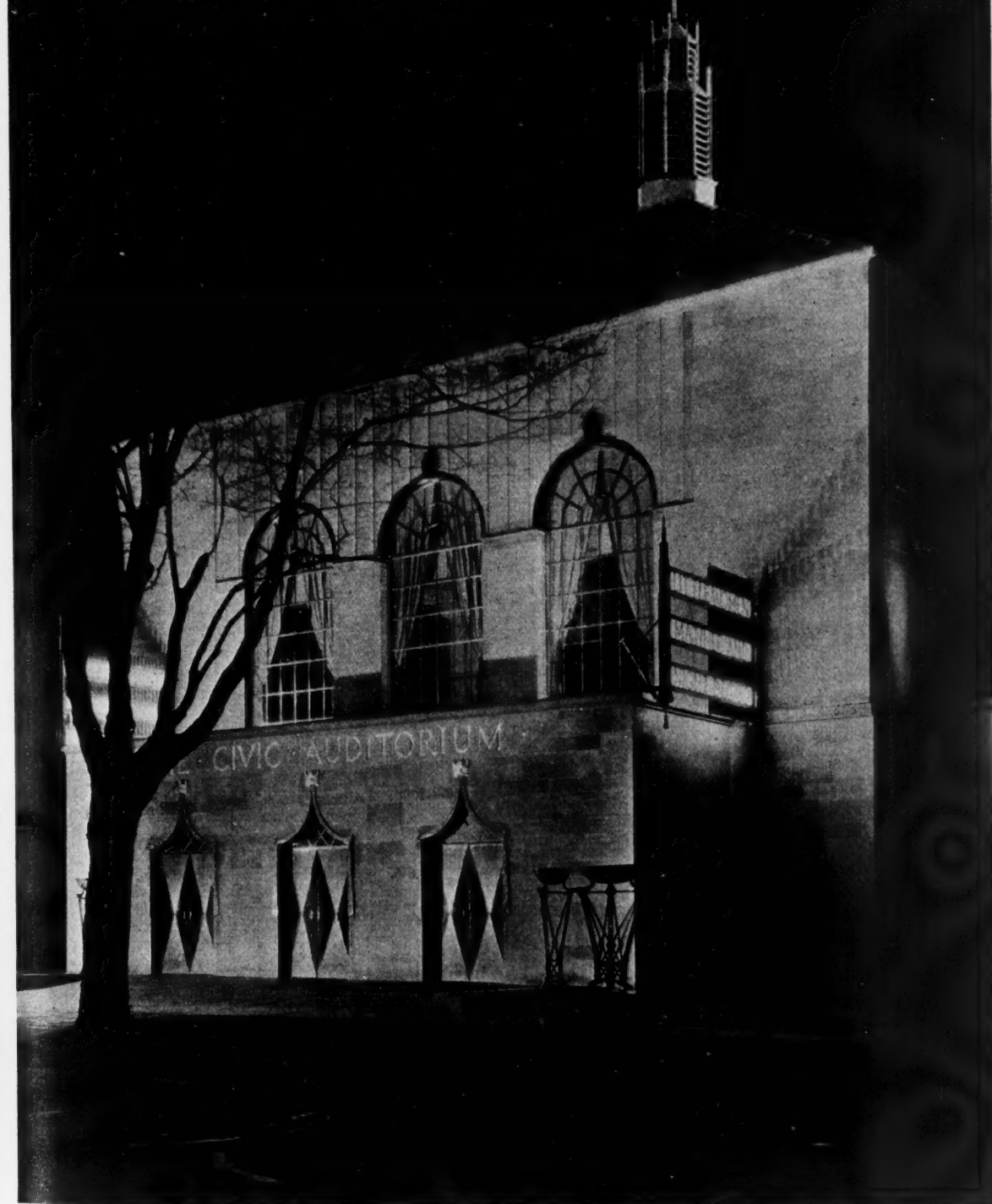
JOHN H. STOKES, Philadelphia, calls attention to the fact that the Germans, able students of the details of pathologic mechanisms, call eczema that form of dermatitis in which the epidermis exhibits an intrinsic quality of hypersensitiveness to irritants, specific or general. About 5 per cent of all human beings exhibit this intrinsic hypersensitivity. In order to clarify the field of "eczema" he proposes, for the moment, *not* to adopt this definition of eczema but to use a broader one, based on the view that all inflammations of the skin exhibit a complex rather than a simple etiology, analyzable on careful study into what might be called predisposing background and exciting causes. He defines an eczema, then, as a persistent dermatitis in which the predisposing causes or background outweigh the immediate cause or causes. The new German concept fits into this scheme as a subhead, for it becomes "eczema allergicum," to coin a phrase, in which epidermal hypersensitivity is the factor that dominates the picture. Thus one may speak of neurogenous eczema, or even neuromycotic eczema, in which an exciting cause such as a yeast infection leads to a dermatitis whose extension and persistence is in part due to the overshadowing influence of the nervous system on the sweat and vasomotor mechanisms, which supplies the background for the yeast growth. Thus "eczema" becomes again a broad etiologic conception, harmonizing with the very wise tendency of dermatology to return to general medical concepts and relations for the full comprehension of its problems. This seems a wiser use of the term than to apply it to single, local or special phenomena, anatomic or functional. The author proposes to speak not of seborrheic eczema, or mycotic eczema, or

even of pure allergic eczema (a term of damnation to the Germans), unless the named designation overwhelmingly dominates the picture. Instead, he speaks of these symptomatic pictures as if they were components in a complex and looks at all eczema for the moment in the light of their interplay. He enumerates ten component factors that make up the etiologic background of "eczema" as commonly understood in American practice thus: (1) the hereditary or familial predisposition factor; (2) the ichthyotic or dry skin factor; (3) the seborrheic habitus or sebaceous dysfunction (oily skin) factor; (4) the pyogenic factor; (5) the mycotic or fungus infection factor; (6) the focal intoxication factor; (7) the metabolic factor with special reference to carbohydrate metabolism; (8) the allergic or hypersensitivity factor, general and specific; (9) the neurogenous factor, and (10) the diathetic state or eczema-asthma-hay fever complex. Distribution tells a surprising amount about an eruption, even before one has clearly identified the elementary lesions or parts of which it is made up. Certain of the foregoing factors have distributions roughly amenable to diagram. By a careful study of the stripped patient, the proportion of these various components taken in connection with the character of the lesions and the landmarks of ichthyosis (which is not a dermatitic state) may be estimated as the basis for diagnosis and treatment. A painstaking study of the patient's history and of familial and hereditary elements further contributes to diagnosis and prognosis. Of especial importance are the ichthyotic, seborrheic and pyogenic trends and the neurogenous and allergic background.—*Journal A. M. A.*

ABDOMINAL PAIN DUE TO HYPOTHYROIDISM

J. William Hinton, New York, calls attention to hypothyroidism as a factor in producing abdominal pain, and emphasizes that patients giving negative roentgen evidence of changes in the gastro-intestinal tract, the gallbladder and the genito-urinary region, as well as negative results in the other laboratory procedures, may in a small percentage of cases be suffering from hypothyroidism; in this group with negative roentgen observations a metabolic determination should be done before any treatment is instituted or before the patients are submitted to an exploratory laparotomy, as occasionally a diagnosis will be established and the symptoms relieved with thyroxine and thyroid extract, the patient being saved a needless operation. There seems little question that, in the past, probably quite a few exploratory procedures have been undertaken with negative results or at least with symptoms persisting after the operation, in which case the entire trouble was referable to the thyroid gland. The condition is probably due to a hypoperistalsis with a pylorospasm and retention of undigested food in the stomach; after the patient vomits the retained food, or the stomach slowly empties, the symptoms are relieved. The author does not want to leave the impression that all patients with abdominal pain in which the roentgenologic observations are negative are suffering from hypothyroidism, for such is not the case; but if this condition is borne in mind a definite diagnosis can be made in a small percentage of cases, and the individual can be benefited by the proper medication. On the other hand, a patient may have a minus metabolic rate and a definite intra-abdominal lesion which will need either medical or surgical treatment. Of course, no benefit could be expected from the abdominal pain by treating the hypothyroidism and neglecting the other condition that is actually causing the pain.—*Journal A. M. A.*

KALAMAZOO • CIVIC • AUDITORIUM



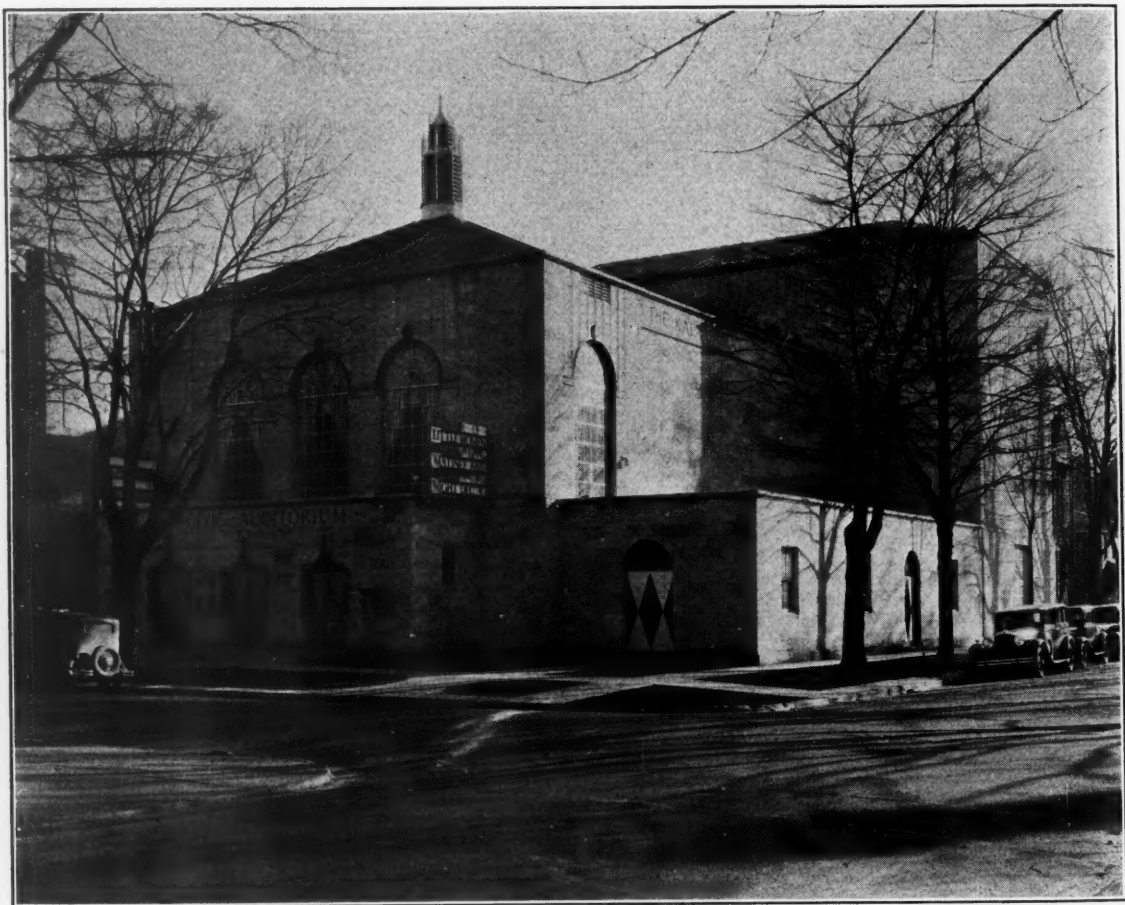
KALAMAZOO—OUR MEETING PLACE

NESTLING among friendly hills, lies the happy, busy city of Kalamazoo; focal point of southwestern Michigan. The census of 1930 shows a population of 68,109 in Greater Kalamazoo with 54,768 within present city limits. Evidence of a healthy, steady growth is evident by comparing with the figure of 48,480 within limits in 1920.

The size of the city plus its transportation and market and its geographic location has

favorable. Rich, fertile soil in the valley of the Kalamazoo River has fostered diversified agriculture—of importance in insuring a food supply at reasonable prices.

Kalamazoo stands at the hub of a large trading area. Retail operations have prospered. The fortunate position of the city—halfway between Detroit and Chicago—insures close metropolitan connections and transportation facilities, so vital to the growth of industry.



Kalamazoo Civic Auditorium—Exterior

established it as the industrial center of southwestern Michigan.

Well diversified industries, the leading of which is the manufacture of paper and paper products, establishes a condition of continued production and employment free from serious market or seasonal reactions.

When in 1829 Titus Bronson founded the community which has since become the city of Kalamazoo, he selected a site peculiarly

The Kalamazoo area is populated ten times as densely as the average for the United States. The main east and west highway in Michigan, U. S. 12, passes through the city. Over one-half the population of Michigan lives within five miles of this road.

Such then is our meeting place to which the city and local profession bids you welcome during our annual session, September 13-15.

HISTORY OF VARIOUS MEDICAL ASSOCIATIONS IN
KALAMAZOO COUNTY

RALPH W. SHOOK, M.D.

THE first report of any medical organization in Kalamazoo County was the year of 1848. Its members were physicians from Allegan, Van Buren, Calhoun and Kalamazoo counties. This society lasted approximately a year when each county formed its own society in 1849. The one in our county speedily dissolved, as did likewise those in the outlying districts.

In 1853, a second attempt was made to organize a society. Its name being the "Southwestern Medical Association of Michigan." After a few meetings at the

February 11, 1868, the "Kalamazoo Medical Association" was organized by Drs. Pratt, Hitchcock, Southard, Fiske, Mottram, Chapin, Johnson and Porter. This society met monthly at the home of its members, "whereby sociality is cultivated as well as science." The meetings gradually became farther apart and on February 27, 1878, pursuant to a call of the secretary of the "Kalamazoo Medical Association," a meeting of the physicians of Kalamazoo County and vicinity met at Corporation Hall for the organization of a District Med-



Kalamazoo Civic Auditorium—Interior
Where the General Sessions will be held.

Court House in Kalamazoo, it gradually disintegrated.

On November 30, 1865, a third attempt at foundation was made at a meeting of the physicians of Kalamazoo and adjoining counties. They met at the Court House and organized the "Kalamazoo Valley Medical Society." Of those physicians present, twelve became charter members and were to meet at their various homes. However, after a year or two it disbanded.

ical Society. This meeting was the anlage of the present "Kalamazoo Academy of Medicine," and was known as the "Kalamazoo District Medical and Surgical Association." Upon a motion, Dr. Hitchcock of Kalamazoo, Dr. Duning of Paw Paw, Dr. Nickhols of Martin, were to draft a constitution, its contents being as follows:

Its members are limited to Kalamazoo and contiguous counties and must be regular practicing physicians.

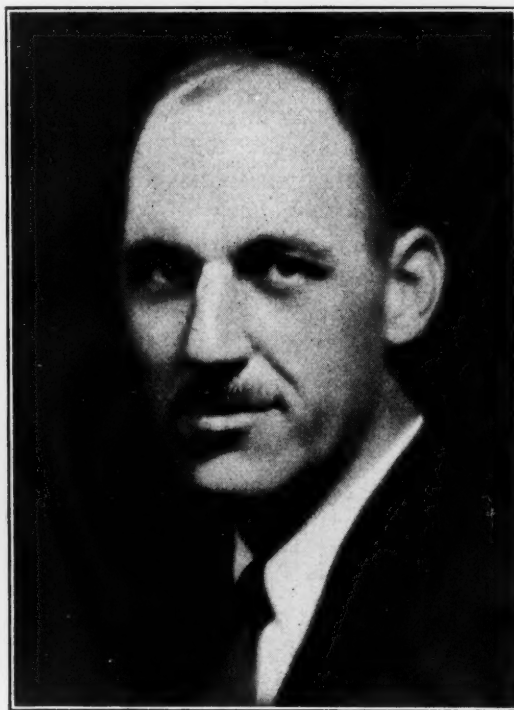
New members may be admitted by recommendation of the censors and upon signing the constitution.

The officers should be a president, two vice presidents, a secretary and treasurer

and a board of censors composed of three members. The meetings shall be held the last Wednesday of January, April, July and October. Dr. H. O. Hitchcock of Kalamazoo was the first president. Dr. B. Barnum of Schoolcraft and Dr. Duning of Paw Paw were vice presidents. Dr. J. W. Fiske, Dr. H. U. Upjohn of Kalamazoo and Dr. Chase of Otsego were censors. J. M. Snook was the secretary and treasurer.



DR. R. A. MORTER
President Kalamazoo Academy



DR. R. J. HUBBELL
Secretary Kalamazoo Academy

and a board of censors composed of three members.

The meetings shall be held the last Wednesday of January, April, July and October.

Dr. H. O. Hitchcock of Kalamazoo was the first president. Dr. B. Barnum of Schoolcraft and Dr. Duning of Paw Paw were vice presidents. Dr. J. W. Fiske, Dr. H. U. Upjohn of Kalamazoo and Dr. Chase of Otsego were censors. J. M. Snook was the secretary and treasurer.

This organization had seventeen charter members and continued to grow, its meetings being every three months. By September, 1883, there were forty-five members of the "Kalamazoo District Medical and Surgical Association," and on the twenty-fifth of this month a quarterly meeting was held in which a motion for incorporation under the laws of Michigan was introduced.

Drs. Hemenway, Duning and Van Antwerp were appointed to carry out the legal side and draft the constitution. In December, 1883, the incorporation of the "Kalamazoo District Medical and Surgical Asso-

ciation" as the "Kalamazoo Academy of Medicine" was perfected and on January 29, 1884, the constitution was voted on and accepted by the charter members, forty in number. The men who were responsible for the organization were: H. H. Schaberg, E. C. Adams, H. O. Hitchcock, Foster Pratt, W. B. Southard, W. Mottram, Adolph Huckstein, O. F. Seely, W. F. Stilwell, I. W. Fiske, H. U. Upjohn, J. M. Snook, E. C. Southard, O. B. Ranney, J. M. Rankin, H. B. Osborne, C. H. McKain, W. L. Worchester, O. F. Burroughs and H. B. Hemenway. The officers elected were: Josiah Andrews, president, and H. B. Hemenway, secretary.

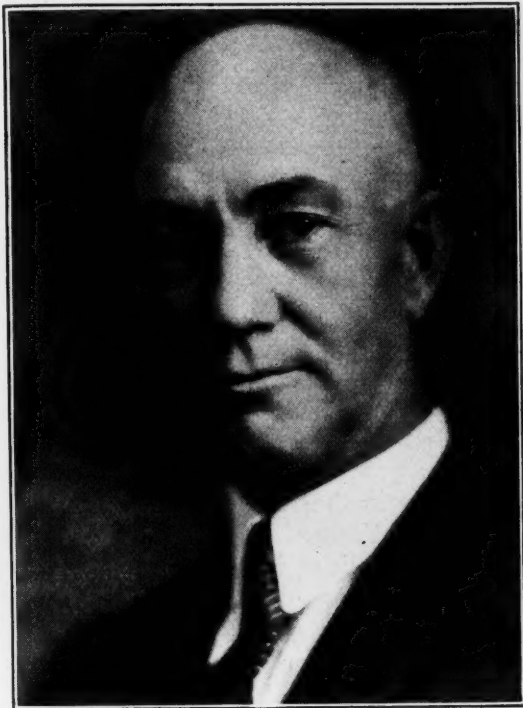
The members agreed to associate themselves for a period of thirty years into a society for literary and scientific improvement in the medical profession, the society to be known as the "Kalamazoo Academy of Medicine," whose office for business shall be in the city of Kalamazoo, Michigan.

Interesting articles of the constitution are as follows:

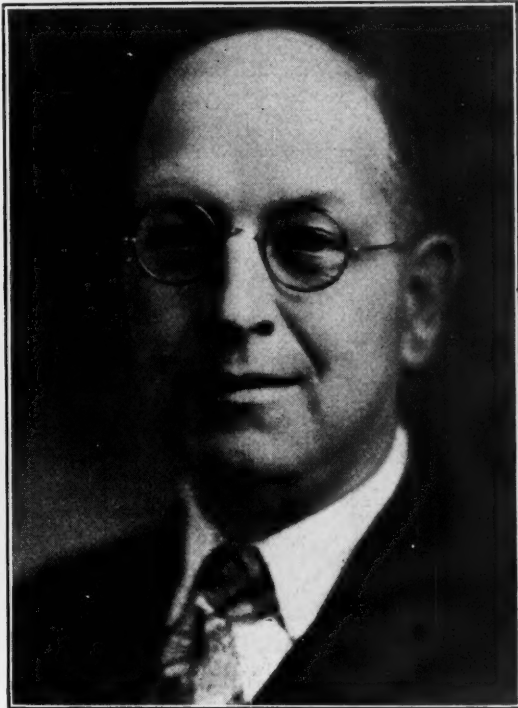
Any legally qualified physician or surgeon, who does not subscribe to, nor practice according to any exclusive dogma of medical practice, may become a member of

this "Academy" upon conditions prescribed in accordance with its by-laws. The duty of each member is to do all in his power to promote the object of this "Academy." This organization adopted the Code of

in various hotels and private places. Previous to the meeting on May 3, 1887, the members had furnished the scientific discussion, but at the meeting on this date, Dr. Carstens of Detroit delivered the first scien-



DR. C. E. BOYS
Councilor, 4th District



DR. F. T. ANDREW
General Chairman

Ethics of the American Medical Association as a rule to govern its members in practice.

The officers of the "Academy" were, a president, first and second vice-president, a secretary, a treasurer, a librarian and a board of censors consisting of six members. The president, secretary and board of censors constituted a board of directors. The officers were elected at the first regular meeting of the "Academy" in each calendar year. In case of a vacancy in any office by death, resignation or deposition, an election was held to fill such a vacancy at the next regular business meeting.

The meeting of the "Academy" shall occur upon the last Tuesday of each alternate month beginning with January, at 1:30 P. M. The January meeting shall be the annual meeting and here shall occur the election of officers. The Annual dues shall be \$1.00 per year, payable at the month of January.

At the third annual meeting in 1887 it was reported that there were fifty members of the "Academy" and an average attendance was twenty, the meetings being held

tific paper and it was moved that the practice be continued at regular intervals.

The problems of the "Academy" were many but all obstacles were met well and in the session of January, 1889, there were sixty-eight members present. On May 9, 1889, the State Medical Society had its annual meeting in Kalamazoo as guests of the "Academy of Medicine."

In January, 1893, Dr. and Mrs. E. H. Van Deusen donated a sum of money to the erection of a public library with a room set aside for medical meetings and a library to be used for no other purpose. This was completed in May, 1893, and the first meeting in the new permanent home was held on May 29, 1893. For the previous three years the meetings had been held at the Court House.

Commencing in the year 1900 the "Academy" held monthly meetings until 1910, at which time a bi-monthly schedule was started.

The bi-monthly meetings continued until October, 1923, when the time was changed to evening and the meetings were followed

by a dinner at some hotel. The monthly meetings have continued until the present time and due to the appropriate gift of kitchen equipment from the Upjohn Com-



First Presbyterian Church House

pany in 1926, the dinners are now held in the "Academy" rooms.

On July 1, 1902, the "Academy" adopted the laws as set forth by the Michigan Medical Society on June 26, 27, 1902. Since the partial re-organization in July, 1902, the "Kalamazoo Academy of Medicine" has carried on its activities for the betterment of local health and at the present time has one hundred and thirty-two members.

On September 13, 14, 15, 1932, this organization will entertain the members of the State Medical Society for its one hundred and twelfth annual meeting. This makes the fifth meeting of its kind in Kalamazoo. The first was on May 9, 1889, the second on May 4, 5, 1899, the third in the summer of 1909 and the fourth on May 25, 26, 1920. The "Academy" also entertained the members of the Northern Tri-State Medical Society on November 5, 1919.

KALAMAZOO COLLEGE

More than ninety-six years of educational leadership constitute the record of Kalamazoo College. Granted a charter in 1833 by the Legislative Council of the Territory of Michigan, Kalamazoo College was founded by the Rev. Thomas W. Merrill and Caleb Eldred, three years before Michigan was admitted as a state.

Throughout the many years of the Col-

lege's history the ideals of those pioneers have been maintained in the attempt to establish what President Allan Hoben has defined as a "Fellowship in Learning." Out of the frontier spot has grown a modern progressive community. The campus in the wilderness is now a spot of beauty in a rich industrial center. The oaks of that pioneer day still stand as a stalwart inspiration to Kalamazoo students.

The educational and cultural advancement at Kalamazoo complements the growth of community life until today only the best accepted methods of education are in practice. It is fully accredited by the North Central Association and the American Association of Universities and Colleges, a status which allows credits earned at Kalamazoo to be exchanged hour for hour and unit for unit in our country or abroad.

Women graduates are eligible for active membership in the American Association of University Women. The contribution of Kalamazoo College in the establishment of women's rights by virtue of its unique position as the first co-educational institution in Michigan, as well as one of the first in the nation, preceded the birth of the A. A. U. W. in 1881.

Built on the concept of the small college and operating on the basis of selective admission, the whole educational process is personal and is permeated with the atmosphere and aim of Christianity. Class instruction takes the form of the round-table discussion, with both the professor and the student assuming the role of "learners," each contributing knowledge of the subject at hand.

The high standards maintained at Kalamazoo have been materially strengthened by the recent increases in physical equipment and endowment. Operating on an endowment fund of approximately one-quarter of a million in 1922 the College has increased its resources until today a permanent endowment of \$2,000,000.00 makes it possible to have \$5,000.00 at work for every student in college.

Beginning in 1923 with the erection of the President's home on the northwest corner of the twenty-five acre campus the following buildings have been added to the physical equipment at Kalamazoo College: Mary Trowbridge House, dormitory for women; the R. E. Olds Science Hall, gift of Ransom E. Olds, automotive manufac-

turer of Lansing; seven faculty homes, housing seven different department heads; the Minnie Mandelle Library, dedicated at the 1930 Homecoming, the bequest of the

needs, became a truly representative State institution, including practically every county of the state in its student body, as well as a sprinkling of students from other



Kalamazoo Park

late Mary Senter Mandelle of Stonington, Conn., and Detroit, and the rebuilt Tredway Gymnasium, the bequest of the late Arthur C. Tredway, Detroit, a former athlete of the class of 1894.

Kalamazoo College has contributed many graduates who have found a liberal arts training valuable in such professions as law, engineering, education, the ministry, medicine, journalism and social service.

WESTERN STATE TEACHERS COLLEGE

Kalamazoo is the home of Western State Teachers College, the youngest of Michigan's four Teachers Colleges and yet one which has so entirely met the needs of the teaching profession that it has grown to one of the largest institutions of its kind in the United States.

Primarily established more than a quarter of a century ago for the training of teachers coming from the Western section of the State, the efficiency that has been brought into the College, and the changing needs of the educational world during this period, and the changing needs of the state, with its wonderful development in an economic way and its tremendous increase in population, have been such that Western State Teachers College, in meeting these growing

states and nations, into which knowledge of Western State Teachers College has gone.

Every effort has been made during this time to constantly strengthen the faculty in every department of the College. Its enrollment throughout the departments and in the institution as a whole reflects the wisdom and the foresight of President Dwight B. Waldo, Western's only president, in the building of a strong institution, such as the standing of its faculty will indicate.

While its main purpose is to prepare teachers for the public schools, the preparation has been such that upwards of 125 of Western's graduates are now teaching in colleges over the country, while a long list of them are also acting as superintendents, school commissioners, principals, critics, etc.

When its purpose, held in common by all of the Teacher Training institutions of the state, is fully realized, every child in Michigan will be taught by a teacher of vigorous health, high mentality, broad and thorough scholarship, high professional spirit, genuine skill in the art of teaching, culture in the amenities of life, winning personality, and sound character.

Western State Teachers College seeks to attract young men and women in whom these high qualities are potential. By careful attention to the formation of those habits which make for good health; by careful development of sound bodies through

physical education; by courses of study which introduce students to the best in thought and life and at the same time give as thorough knowledge in the various branches of study as possible in the time devoted to the work; by teaching which develops right habits of study, an appreciation of scholarship, and an understanding of the principles underlying the teaching process; by providing ample opportunity for prospective teachers to become acquainted with children and to observe and practice teaching in its varied system of schools; by developing initiative, self-reliance, and community spirit by voluntary participation along the line of the student's taste or interest in a wide range of extra-curricular activities; by encouraging in every way a sane, wholesome social life, —in all these ways the College aims to develop in its students the essential qualities of the teacher, and, as a consequence, to do its part in giving the State of Michigan a body of teachers thoroughly trained for every phase of their work. The College is progressive in educational policy and practice. It fosters a wholesome spirit of democracy.

Western State Teachers College extends an invitation to the members of the Michigan State Medical Association to visit the campus and to become better acquainted with this important and rapidly growing state institution.

KALAMAZOO STATE HOSPITAL

R. A. MORTER, M.D.

The first reference to the care of the insane in Michigan is to be found in an act creating the Board of Superintendents of the Poor in Wayne County, approved March 7, 1834. This act made it lawful for the directors of the poor of the several townships of the territory of Michigan and for the mayor, recorder and aldermen of the City of Detroit, or any person whom they should appoint, to cause to be confined, either in the county jail or other place of security, those paupers who were not of sound mind.

When Michigan was admitted to the Union in 1837 there was no provision for the care of the insane except as they were detained in the county prisons. The first reference to an insane inmate of a county

poorhouse in Michigan is contained in the records of the Wayne County Poorhouse under date of March 22, 1841. At this time Bridget Hughes was admitted, and the entry "crazy" was placed beside her name in the register. In the years that followed it was the common practice of Wayne County to send their insane to the county poorhouse.

The subject of public provision for the insane of the State of Michigan was first introduced for Legislative action in 1848. A joint resolution of the Senate and the House of Representatives made it the duty of the assessors in their annual assessment rolls to report the number of insane, deaf and dumb, and blind in their respective townships. The assessors finished their canvas and reported to the 1851 Legislature that there were between 300 and 400 insane in the State of Michigan, the majority of which were confined in county houses and jails. Before the Legislature of 1848 adjourned an act was passed which provided for the establishment of a hospital for the insane and an asylum for the deaf and dumb, and blind. Eight sections of "Salt Spring Land" were appropriated for the erection of the buildings. The government of the proposed institutions was vested in a Board of Trustees. In 1849 the Legislature increased the appropriation of land to fifteen sections (9,600 acres) and required the immediate selection of land, the proceeds from the sale of which were to be credited to the Asylum Fund. It further made it the duty of the Board of Trustees to select suitable locations. The first Board of Trustees held their first meeting at Detroit, May 22, 1849, and in their first report of December 22, 1849, made public their selection of a site for the asylum for the insane at Kalamazoo. The citizens of that village donated as an inducement \$1,506.00 in conditional notes and ten acres of land.

The following Legislature appropriated ten additional sections of land, making a total of 16,000 acres and \$5,000.00 from the general fund, to be used by the Trustees in the construction of the asylum and defraying other expenses. The land did not sell and the \$5,000.00 appropriated was not sufficient to start the construction. An urgent appeal to the Legislature of 1853 resulted in the appropriation of \$20,000.00 to be used as a purchasing and construction fund. The erection of an institution ca-

pable of accommodating 200 patients was recommended.

When the Legislature met in 1855 the report showed that \$17,487.48 had been spent

eminent physicians, surgeons and neurologists who frequently are called for consultation and operation. The therapy administered by the staff is augmented by a corps



State Normal College, Kalamazoo

at Kalamazoo toward the construction of buildings. This Legislature appropriated an additional sum of \$67,000.00 as an asylum construction fund and the building program continued.

On August 29, 1859, the Michigan Asylum at Kalamazoo, the first state institution of the kind in the State of Michigan, was formally opened, eleven years after the enactment of the law which provided for its establishment.

A few decades ago little was known regarding the causes of nervous and mental diseases. In those days custodial care of the insane was about all that could be expected. The medical profession spurned the practice of psychiatry because of the apparent hopelessness for results in this branch of medicine. The Legislature of 1911 changed the name of the Michigan Asylum for the Insane to Kalamazoo State Hospital. This change in the name was brought about as result of a recognition of the passing of the old asylum and the approach of a Hospital for the mentally diseased, equipped to do scientific work equal to that done by any General Hospital.

Today the Kalamazoo State Hospital represents an investment of nearly four million dollars and has a population of about 2,800 patients.

The chief executive of the Kalamazoo State Hospital is a physician registered to practice medicine in the State of Michigan. The medical staff consists of nine registered physicians who are resident at the hospital. There is a visiting and consulting staff of

of registered nurses, occupational therapists, laboratory technicians, psychologists, social workers and attendants.

When a new patient is admitted into the hospital he is put to bed and the case is studied the same as in any general hospital. A complete examination is made at once and the laboratory tests are given as soon as possible. An early effort is made to find some organic disease which may be the cause or the contributory cause of the individual's mental illness. If etiological factors or organic disease are not located we do not send the patient off to a so-called chronic ward and tell the relative that it is an incurable case. The case may be transferred from the Receiving Hospital, but he is kept under continued observation and treatment with the hope that something will be discovered which will return the patient to a normal mental state or prevent profound mental deterioration.

The American Medical Association recognizes the Kalamazoo State Hospital as a teaching hospital and has admitted the name of this institution to the Hospital Register. Our School of Nursing and our residency in neuropsychiatry are approved by the Council. We have a School of Occupational Therapy and plan soon to open a School for post graduate work in psychiatric nursing.

Unfortunately, during this present economic depression, there are those among us who still believe that the insane should have custodial care only. It is our opinion that every State Hospital should be conducted on the same standard as recognized general

hospitals. It is hoped that the medical profession of this great commonwealth will see that this standard is maintained in this State.

We honestly believe that the time will come when the surgical and medical practice in the State Hospitals for the insane will be such that these hospitals will be accepted by the American College of Physicians and the American College of Surgeons.

BORGESS HOSPITAL

Borgess Hospital, located in the suburbs of Kalamazoo, Michigan, was opened for the first time in August of 1889. Previous to that time the only place where a poor sick stranger might find a home was at the county jail.

It happened one day a phone call summoned the priest to attend a man in the jail, who was apparently very sick and a stranger without friends. Monsignor O'Brien, then pastor of St. Augustine's Parish, went to the dying man's assistance. The existing conditions and the pitiable story of the poor victim found a refrain in the sympathetic heart of Monsignor O'Brien for then and there he resolved to do all in his power to establish a hospital where the poor and afflicted would receive proper care.

Just at this time Right Reverend Bishop Borgess of Detroit was visiting Monsignor O'Brien and gladly coöperated with his plan by offering five thousand dollars to aid the worthy cause.

Immediately measures were taken, and an old mansion with spacious grounds was purchased on south Portage Street. In November of the same year Borgess Hospital opened its doors to its first patients, under the management of the Sisters of St. Joseph, and since then many poor and destitute have found a home within its sheltering walls.

In 1917 the hospital quarters were found too small to accommodate the great number of patients, and a thirty-three acre tract of

land was purchased on Gull Road, and a new building was erected and called New Borgess Hospital, with an accommodation of 125 beds. In 1927 a new addition was added to this building with an additional accommodation of 225 beds, and in November, 1929, both hospitals were combined and is now known as Borgess Hospital, located on Gull Road.

The hospital staff is known as the open staff and meets on the first Tuesday of each month.

Borgess Hospital is on the accredited list of the American College of Surgeons and a life member of the Catholic Hospital Association.

In connection with the hospital is a training school known as the St. Camillus School of Nursing with an accommodation for about eighty students. The training school is affiliated with Nazareth College, Nazareth, Michigan.

HOTELS AND RESERVATIONS

NEW BURDICK HOTEL

175 Rooms

Single Rooms Without Bath.....	\$1.50, \$1.75, \$2.00, \$2.50
Double Rooms Without Bath.....	2.50, 3.00, 3.50
Single Rooms With Bath.....	2.25, 2.50, 3.00
Double Rooms With Bath.....	3.50, 4.00, 4.50
Twin Rooms With Bath.....	5.00, 6.00

HOTEL COLUMBIA

75 or 100 Rooms

Single Rooms Without Bath.....	\$1.50, \$2.00, \$2.50
Double Rooms Without Bath.....	2.50, 3.50, 4.00
Single Rooms With Bath.....	2.50, 3.50
Double Rooms With Bath.....	4.00, 5.00

PARK-AMERICAN HOTEL

75 or 100 Rooms

Single Rooms Without Bath.....	\$1.50
Double Rooms Without Bath.....	2.00
Single Rooms With Bath.....	2.50
Double Rooms With Bath.....	4.00
Twin Beds With Bath.....	5.00

HOTEL RICKMAN

100 Rooms

Single Rooms Without Bath.....	\$1.75, \$2.00
Double Rooms Without Bath.....	2.50, 3.00, \$3.50
Single Rooms With Bath.....	2.50
Double Rooms With Bath.....	4.00, 4.50

OFFICIAL PROGRAM

112th Annual Meeting Michigan State Medical Society
September 13, 14, 15 and 16, 1932

OFFICIAL CALL

The Michigan State Medical Society will convene in annual session in Kalamazoo on Sept. 13, 14, 15, 1932. The provisions of the Constitution and By-laws and the official program will govern the deliberations.

CARL F. MOLL, *President*

B. R. CORBUS, *Chairman Council*

H. J. PYLE, *Speaker*

Attest:

F. C. WARNSHUIS, *Secretary*

MEETING PLACE

FIRST PRESBYTERIAN CHURCH HOUSE and
CIVIC AUDITORIUM

CHURCH HOUSE

Registration

Exhibits

House of Delegates

CIVIC AUDITORIUM

General Sessions

Combined Sectional Meetings

PROGRAM

The detailed program will appear in the September Journal. Please note that the program this year is a departure from former sessions. The individual sections will convene in the mornings.

In the afternoons all the sections will join

in a combined meeting in the Civic Auditorium. The speakers will be invited guests from out of the state. Their papers will be upon subjects of interest to every doctor and related to every branch of practice.

HOUSE OF DELEGATES

Speaker: Henry J. Pyle, Grand Rapids.

Vice-Speaker: C. E. Dutchess, Detroit.

Secretary: F. C. Warnshuis, Grand Rapids.

Sessions

Place: Auditorium, First Presbyterian Church House.

Time: Tuesday, September 13, at 10:00 A. M., 2:30 P. M., and 7:30 P. M.

Order of Business, Committee Reports and list of Delegates will be published in the September Journal.

General Meetings

Place: Civic Auditorium.

Time: Wednesday evening, 7:30 P. M., September 14.

1. President's Annual Address—President Carl F. Moll, M.D., Flint.
2. Address—Invited Guest.
3. Introduction of President-elect J. M. Robb, M.D., Detroit.
4. In Memoriam.

Second General Meeting

Place: Civic Auditorium.

Time: Thursday evening, 7:45 P. M., September 14.

1. Introductory Remarks.
2. "The Community's Responsibility to the Medical Profession."—Morris Fishbein, M.D., Editor of the Journal of the American Medical Association, Chicago.

CONDENSED DAILY SCHEDULE

Tuesday (Sept. 13)	Wednesday (Sept. 14)	Thursday (Sept. 15)	Memorandum
10:00 A.M. House of Delegates	9:15 A.M. Section Meetings Medicine Surgery Gynecology and Obstetrics E. E. N. and T. Pediatrics Dermatology	9:15 A.M. Section Meeting Medicine Surgery Gynecology and Obstetrics E. E. N. and T. Pediatrics Dermatology	1. Registration: Church House 2. Scientific and Commercial Exhibits: Church House 3. Combined Meetings: Civic Auditorium 4. General Meeting: Civic Auditorium 5. House of Delegates: Civic Auditorium 6. Section Meetings: See Bulletin Board —o—
Afternoon	Afternoon	Afternoon	
2:30 P.M. House of Delegates	1:15 P.M. Combined Meeting [All Sections]	1:15 P.M. Combined Meeting [All Sections]	
7:30 P.M. House of Delegates	7:30 P.M. General Meeting President's Address	7:45 P.M. Public Meeting Morris Fishbein, M.D. Address	NOTICE Do not fail to visit Scientific and Commercial Exhibits in Church House. —o—

LOCAL COMMITTEES—ANNUAL MEETING—KALAMAZOO

Entertainment

Dr. John MacGregor, Chairman

Registration

Dr. John Koestner, Chairman

Hotels

Dr. W. G. Hoebeke, Chairman

History

Dr. Ralph Shook, Chairman

Auxiliary

Dr. Sherman E. Andrews, Chairman

Finance

Dr. C. E. Bennett, Chairman

Garages and Parking Spaces

Dr. Kenneth Crawford, Chairman

Commercial Exhibits

Dr. Hugo Aach, Chairman

Scientific Exhibits

Dr. Hazel Prentice, Chairman

Section Monitors

Medicine.....Dr. Stewart

Surgery.....Dr. Shackelton

Gynecology and Obstetrics.....Dr. Boys

Dermatology.....Dr. West

Ophthalmology and Otolaryngology

Dr. Fast and Dr. Fulkerson

Pediatrics.....Dr. Collins

SECTION PROGRAMS

Dermatology and Syphilology

Chairman: C. K. VALADE, Detroit.

Secretary: G. H. BELOTE, Ann Arbor

Wednesday, September 14, 1932

9:15 A. M.

Election of Officers.

"The Treatment of Malignant and Pre-malignant Dermatoses"—Dr. C. K. Hasley, Detroit.

The various accepted methods of treatment of malignant skin lesions will be discussed. Emphasis will be placed on their response to X-Ray and Radium treatment in hypermassive doses. A portion of the paper will be devoted to the electrocoagulation method of treating malignancies which have received insufficient radiation therapy by underdosage over prolonged intervals of time. The paper will be illustrated with lantern slides.

"A Review of the Treatment of Psoriasis by the Low Nitrogenous Diet"—Dr. R. C. Jamieson, Detroit.

A brief mention of the early studies regarding diet in psoriasis, particularly a low nitrogenous intake. The effect of a low nitrogenous diet alone or in combination with other methods of treatment upon the lesions of psoriasis. Results reported. Relation of nitrogen intake to endocrine metabolism—

particularly the pituitary. A brief discussion of whether an abnormal nitrogen intake can be only one of the many factors inducing a metabolic change resulting in psoriasis.

"The Management of the Treatment of Syphilis in General Practice"—Dr. George Van Rhee, Detroit.

Outline.

1. Introduction.
2. Drugs.
3. Dosage.
4. Patient.
 - A. Preparation.
 - a. Mental.
 - b. Economics.
 - c. Physical.
5. Scheme for Treatment.
 - A. Primary-Secondary.
 - B. Latent.
 - C. Prenatal.
 - D. Congenital.

"The Physical Therapy of the Commoner Skin Diseases"—Dr. H. J. Parkhurst, Toledo.

The forms of physical therapy of the commoner dermatoses, as usually employed by the general practitioner, will be mentioned and evaluated, and statistics from the author's practice will be cited in an attempt to point out the most successful and practical procedure for the treatment of each skin disease.

Wednesday P. M.

Combined meeting of sections.

Thursday, September 15—9:30 A. M.

Presentation and Discussion of a group of Dermatologic cases at the Health Service of the Western State Teachers College. Discussants will attempt to establish diagnoses and point out the most successful forms of therapy.

Clinic in charge of Doctors A. E. West, A. P. Biddle, U. J. Wile, R. C. Jamieson, C. K. Valade, H. L. Keim, H. S. Bartholomew, and Arthur Woodburne.

Thursday P. M.

Combined meeting of sections.

Gynecology and Obstetrics

Chairman: N. F. MILLER, Ann Arbor

Secretary: H. A. FURLONG, Pontiac.

First Day—September 14, 1932

9:00 A. M.

Chairman's Address—Dr. N. F. Miller, Ann Arbor, Michigan.

"Functional Disorders of the Ovary"—Dr. J. P. Pratt, Henry Ford Hospital, Detroit, Michigan.

Functional disorders of the ovary are more common than organic lesions. Diagnosis of the type and degree of disorders should pre-

cede therapy. Variations from normal functions are often difficult to determine. Menstrual irregularities are most easily observed indicators of the state of ovarian function. Classification of ovarian disorders is difficult. Results of treatment are compared.

"The Gynecological Symptoms in the Mal-adjusted Woman"—Dr. B. W. Mal-froid, Flint, Michigan.

In Gynecology today increasing emphasis is being placed on the influence of environment and social adjustments upon the emotional reactions of the patient. Changing social and economic conditions of modern life and their reflection in various physical signs and symptoms among women are discussed and illustrated with case reports.

"Prenatal Care and Its Importance"—Dr. Howard O. Brush, Port Huron, Michigan.

The importance of prenatal care and its newer aspects are stressed. Just what the obstetrician can hope to accomplish, especially in the prevention of toxemias, is given prime consideration.

"A Consideration of Puerperal Infection"—Dr. M. J. Lieberthal, Ironwood, Michigan.

The ever present hazard of puerperal morbidity and mortality warrants repetition and consideration of etiological factors as well as newer methods of treatment. A case report of a patient with unusual complications is included.

Second Day—September 15

9:00 A. M.

"Scopolamine Alone for the Relief of Pain During Labor"—Dr. L. E. Daniels, Detroit, Michigan.

The results of the use of scopolamine in five hundred labors for the production of amnesia and analgesia without morphine is discussed. The advantages and disadvantages over other common drugs are presented. Its effect upon the baby and mother, and its limitations are considered.

"The Use of Sodium Amytal and Avertin in Obstetrics"—Dr. W. C. Ellet, Benton Harbor, Michigan.

The use of sodium amytal and avertin, in the opinion of the author, has a proper and useful field in obstetrics. Without considerable contra-indications or dangers, it approaches closely the ideal obstetrical anesthesia. The apparent synergistic action of these two drugs is considered.

"Sodium Amytal and Pernocton in Obstetrics"—Dr. B. L. Lieberman, Detroit, Michigan.

The methods of administration and results from the use of these drugs during labor are discussed by the author. The drawbacks as well as the advantages are carefully considered.

Ophthalmology and Otolaryngology

Chairman: WILFRID HAUGHEY, Battle Creek

Secretary: H. O. WESTERVELT, Benton Harbor

Wednesday, September 14—9:30 A. M.

1. Chairman's Remarks. Dr. Wilfrid Haughey, Battle Creek.
2. "Prevention and Non-Surgical Treatment of Cataracts"—Dr. Alfred Dean, Grand Rapids.

The ophthalmoscope has been responsible for clearing up many of the early false conceptions of cataract, but it did not correct the etymology of the term. With improved technique and observation, cataracts have received a more definite classification. While it may commonly be considered as a result of senile degeneration, it is more often a secondary condition, resulting from local or systemic causes which might be prevented by observation of rules of hygiene and sanitation.

The location of the lens, with its source of nutrition and its duties, exposes it to early injury from internal and external causes, so that it may be one of the first tissues to manifest signs of pathology.

The slit-lamp has given us much valuable information that was beyond our reach with the ophthalmoscope, and gives its operator living material to study microscopically, and, as a result, local or systemic effects on the lens tissue are now recognized as producing a more or less characteristic picture.

Prevention is the treatment of choice, but if acquired opacities in the lens do develop, there is more to be offered the patient than a pair of glasses, or a cataract extraction at a later date.

Discussion—Dr. P. T. Grant, Grand Rapids.

Dr. H. H. Sanderson, Detroit.

3. "Retinal Lesions Encountered in Cardiovascular Disease"—Dr. George F. Suker, Chicago.

Discussion—Dr. George Slocum, Ann Arbor.

Dr. Don M. Campbell, Detroit.

4. Case Reports: "Tenonitis." "Dislocated Lenses." "Foreign Body in the Orbit." "Unilateral Spasm of the Accommodation"—Dr. Alexander R. McKinney, Saginaw.

1. Spontaneous extrusion of a foreign body (piece of cartridge shell), which had passed entirely through globe, lodging in the orbit.

2. Persistent dilatation of the pupil which was finally explained by discovering a very small foreign body in the globe. Extraction with magnet and recovery.

3. Dislocation of hypermature cataractous lens in the vitreous necessitating enucleation.

4. Dislocation of lens into anterior chamber in a high myope. Liquid vitreous. Extraction and recovery.

5. Suppurative Tenonitis, metastatic in origin. Staphylococcus albus. Enucleation with gold ball implant.

Discussion—Dr. H. B. Weinburgh, Lansing.

Dr. Wm. Edw. McGarvey, Jackson.

Wednesday, September 14, Dr. Suker will present a reel of Motion Pictures of a new Operation for Glaucoma which in his hands "has been very satisfactory in every detail."

Thursday, September 15, Dr. Lillie will show before our Section a four hundred foot reel of "Cataract Surgery in India" pictures, which he will describe.

LUNCHEON—12:00 M.

Round Table Conference: Dr. George F. Suker, Chicago.

"Ophthalmological Problems of Everyday Practise."

QUESTIONS DESIRED DISCUSSED MUST BE WRITTEN AND HANDED IN EARLY FOR DR. SUKER'S CONSIDERATION.

Thursday, September 15—9:30 A. M.

1. Case Presentations and Reports—Dr. Ralph B. Fast, Kalamazoo.

2. "Factors in Making the Diagnosis in Sinus Disease"—Dr. Millard F. Arbuckle, St. Louis, Missouri.

Discussion—Dr. H. Lee Simpson, Detroit.

Dr. Robt. Frazer, Battle Creek.

3. "The Clinical Significance of Retrobulbar Neuritis"—Dr. W. I. Lillie, Rochester, Minnesota.

Retrobulbar neuritis is a definitely established clinical entity, although the etiology is not always so readily revealed. Any case of retrobulbar neuritis is important enough to warrant a thorough search for any or all causes, inasmuch as it may be a prodromal phase of a serious ailment.

Retrobulbar neuritis may be either acute or chronic, depending upon the case. The chronic type is more readily overlooked both by the patient and the doctor, and is not so amenable to treatment. A large number of the acute type spontaneously get better, and one is apt to credit whatever form of treatment instigated as the curative agent.

The etiology of retrobulbar neuritis as revealed at the Mayo Clinic, and representative case histories of each group, are presented. The type of treatment and the end-results obtained in the different groups are summarized.

Discussion—Dr. Fred'k E. Grant, Kalamazoo.

Dr. John R. Rogers, Grand Rapids.

4. "Certain Rhinologic Aspects of Allergy"—Dr. Warren T. Vaughan, Richmond, Virginia.

Discussion—Dr. George L. Waldbott, Detroit.

Dr. Ferris N. Smith, Grand Rapids.

LUNCHEON—12:00 M.

Round Table Conference: Dr. Millard F. Arbuckle, St. Louis, Mo.

Dr. W. I. Lillie, Rochester, Minn.

"Eye, Ear, Nose and Throat Problems of Everyday Practise."

QUESTIONS DESIRED DISCUSSED MUST BE WRITTEN AND HANDED IN EARLY FOR DR. ARBUCKLE'S AND DR. LILLIE'S CONSIDERATION.

Surgery

Chairman: JOHN ALEXANDER, Ann Arbor.
Secretary: G. J. CURRY, Flint.

September 14, 1932—9:00 A. M.

1. "Intestinal Obstruction"—Dr. R. L. Mustard, Battle Creek.

Discussion—H. K. Ransom, A.B., M.D., Ann Arbor.

R. S. Morrish, B.S., M.D.

2. "Pre-Operative Care of Patient"—Dr. R. H. Baker, Pontiac.

Discussion—W. L. Finton, M.D., Jackson.

A. L. Arnold, Jr., M.D., Owosso.

3. "Post-Operative Care of Patient"—Dr. F. A. Collier, Ann Arbor.

Discussion—Geo. L. LeFevre, M.D., Muskegon.

G. Seibold, M.D., Jackson.

4. "Head Injuries"—Dr. H. E. Randall, Flint.

Discussion—M. M. Peet, M.A., M.D., Ann Arbor.

A. S. Crawford, B.S., M.D., Detroit.

5. "Empyema"—Dr. S. W. Harrington, Rochester, Minn.

Discussion—E. J. O'Brien, M.D., Detroit.

Clyde I. Allen, Detroit.

Morning, Dry Clinic

September 15, 1932—9. A. M.

1. "Diagnosis and Treatment of Goiter."—Dr. C. E. Boys, B.Sc., Kalamazoo.
2. "Important Little Things in the Treatment of Anal Diseases"—Dr. L. J. Hirschman, Detroit.
3. "Amputations, with Particular Reference to Preparation of the Stump"—Dr. C. E. Badgley, Detroit.
4. "New Methods of Relieving Prostatic Obstruction"—Dr. Reed Nesbit, Ann Arbor.
5. "Management of Colles Fracture"—Dr. Grover C. Penberthy, Detroit.

General discussions on each paper lasting three minutes.

General Medicine

Chairman: RICHARD M. McKEAN, Detroit.

Secretary: IRVING W. GREENE, OWOSSO

September 14—9:15 A. M.

1. Chairman's Address—"Diabetes and Tuberculosis"—Dr. Richard M. McKean, Detroit, Michigan.
2. "New Concepts in the Treatment of Diabetes"—Dr. L. H. Newberg, Ann Arbor, Michigan.
3. "Nephritis"—Dr. Floyd H. Lashmet, Ann Arbor, Michigan.
4. "Arteriosclerosis and Hypertension"—Dr. C. G. Jennings, Detroit, Michigan.
5. "Treatment of Acute Coronary Thrombosis"—Dr. Samuel Levine, Boston, Massachusetts.

September 15—9:15 A. M.

1. "Arthritis"—Dr. Joseph Miller, Chicago, Illinois.
2. "Migraine, Particularly as an Allergic Manifestation"—Dr. Warren Vaughn, Richmond, Virginia.
3. "Neurological Diagnosis"—Dr. Carl Camp, Ann Arbor, Michigan
4. Joint Meeting with the Surgical Section Clinical Pathological Conference under direction of
Dr. Cyrus C. Sturgis, Ann Arbor, Michigan.
Dr. Plym Morse, Detroit, Michigan.

Pediatrics

Chairman: T. D. GORDON, M.D., Grand Rapids

Secretary: CAMPBELL HARVEY, M.D., Pontiac

First Session

Wednesday

September 13

1. 9:00 to 9:30—N. W. Larkum, M.D., Lansing—Bacteriophage
2. 9:30 to 10:00—D. J. Barnes, M.D., Detroit—Cod Liver Oil Concentrates
3. 10:00 to 10:45—C. M. Spooner, M.D., Toronto, Ont.—Anomalies of the Genito-urinary Tract in Children
4. 10:45 to 11:30—Francis E. Seneear, M.D., Chicago—Infantile Eczema
5. Open

Second Session

September 14

1. 9:00 to 9:15—Election of officers
2. 9:15 to 9:45—President's Address—T. D. Gordon, M.D., Grand Rapids, Mich.—The Relation Between Cerebral Diplegia and Birth Injury
3. 9:45 to 10:30—A. U. Desjardins, M.D., Mayo Clinic—Therapeutic Radiology in Relation to Infancy and Childhood
4. 10:30 to 11:00—W. J. Wilson, M.D., Detroit—Congenital Heart Disease with Reports of Cases
5. 11:00 to 11:30—Barnes, M.D., Dept. of Pediatrics, Ann Arbor—Behavior Problems in Childhood.
6. 11:30 to 12:00—Reserved for Pediatrics Dept., Ann Arbor

COMBINED SECTION MEETINGS

Civic Auditorium

Wednesday, September 14—1:15 P. M.

- "Diagnosis and Management of Premature Detachment of Normally Implanted Placenta"—Fred Falls, M.D., University of Illinois, Chicago.
- "Treatment of Varicose Veins"—Eugene A. Osius, M.D., Detroit.
- Miln C. Harvey, M.D., Detroit.
- "Mammary Neoplasms"—R. R. Smith, M.D., Grand Rapids.
- "Allergy in Medical Practice"—Dr. Warren Vaughan, Richmond, Va.
- Talking Motion Pictures: "Cardiac, Vaso-motor and Respiratory Phenomena"; "Signs and Symptoms of Raised Intracranial Pressure."
- (Courtesy Petrolagar Laboratories)
- No Discussions During Afternoon Sessions.

